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To

The Medical Society
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from

the Author.

SOCIETY OF LONDON MEDICAL

A
TREATISE
ON THE
COW-POX;
CONTAINING THE HISTORY
OF
VACCINE INOCULATION,
AND
AN ACCOUNT OF THE VARIOUS PUBLICATIONS
WHICH HAVE APPEARED ON THAT SUBJECT,
IN GREAT BRITAIN, AND OTHER PARTS
OF THE WORLD.

By JOHN RING,
MEMBER OF THE ROYAL COLLEGE OF SURGEONS IN LONDON.

INUTILESQUE FALCE RAMOS AMPUTANS,
FELICIORES INSERIT.

PART I.

LONDON:

Printed at the Philanthropic Reform, St. George's Fields,
by J. Richardson, No. 4, Lambeth-Road, Southwark.

SOLD BY MESSRS. J. AND T. CARPENTER, OLD BOND-STREET;
AND J. JOHNSON, ST. PAUL'S CHURCH-YARD.

1801.

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PREFACE.

BOERHAAVE, speaking of the small-pox, says,
“ There is reason to hope, a specific may be found
to correct this malady; and we are impelled to
seek for such a specific, by the vast advantage
that would thence accrue to mankind.”

His words are prophetic; his hope is realized;
a specific is discovered for that disease, which has
been the scourge of Europe for a thousand years,
and committed the most dreadful ravages in every
quarter of the world.

May the author of that discovery, which so emi-
nently distinguishes him as **THE BENEFCTOR
OF THE HUMAN RACE**, live to reap the
fruits of his labours! and to receive every possible
demonstration of private and public gratitude and
esteem!

The vast number of remarks published on Vac-
cine Inoculation, both at home and abroad, having
swollen this Treatise far beyond the bulk at first
intended, it was deemed expedient to divide it
into two parts. The continual occurrence of new
facts, and publication of new treatises on the

subject, rendered it impracticable to preserve a strict and methodical arrangement. The intention of the author was, to collect and combine the substance of all that has hitherto been ascertained on this interesting subject; and rather to incur the censure of prolixity, than to deserve the charge of omitting any thing of importance, on an occasion, where the welfare and happiness of the whole human race are so immediately concerned.

In some measure to supply the want of systematic order, a copious Index will be subjoined to the second part. Two plates will accompany that part; which will unavoidably cause an addition to the price. The difficulty of procuring accurate representations of the Vaccine Pustules has delayed the publication of this work; and, it is hoped, the reason, when understood, will plead a sufficient apology for that delay. It was the author's wish, to have given one plate with each volume; but he was unwilling longer to defer, what, he sincerely hopes, may prove useful.

A TREATISE
ON
THE COW-POX.

THE subject on which I propose to treat, is one of the most important that can engage the attention of medical practitioners, or of the public. It is not confined to the limits of any age or nation; but embraces the dearest interests of the whole human race, and involves in its consequences the health of all posterity.

It was first brought forward to public notice by Dr. Jenner, in June 1798, in a work entitled "An Enquiry into the causes and effects of the Variolæ Vaccinæ, a disease discovered in some of the western counties of England, particularly Gloucestershire, and known by the name of the Cow-pox."

Since that time, Dr. Jenner has favoured the world with two additional tracts on the same subject; one entitled, "Further Observations on the Variolæ Vaccinæ," the other, "A continuation of facts and observations relative to the Variolæ Vaccinæ." These three tracts have since been republished in one volume.

The degree of interest naturally excited by so important a discovery, has occasioned a considerable number of experiments to be instituted by gentlemen

of the medical profession and others. The subject having now undergone an ample discussion in distinct pamphlets, and in a great variety of miscellaneous publications, as well as in the different medical societies of this great metropolis;—it appeared to me, that any person who should collect and arrange the principal arguments and facts, respecting the vaccine inoculation, and add the result of his own experience, would render an essential service to the public.

Much has already been done by the labours of Dr. Jenner; but it is only by the assiduous attention, united efforts, and indefatigable exertions of medical practitioners in general, that this, or any other branch of our abstruse art, can ever be brought to perfection.

A considerable time has elapsed since this practice commenced, and sufficient opportunities have occurred, for examining its real merits; yet we still meet with gentlemen of the profession, who oppose its progress. The arguments of these gentlemen would have greater weight, did they not confess, that they are totally unacquainted with the nature and effects of the disease in question.

Much light has already been thrown on the subject, by Dr. Jenner, who may be considered as the sun of this new world of science, and by others. I shall endeavour to collect and concentrate the scattered rays of that light.—There are profes-

sional men, who cannot find money to purchase, or time to read, the various publications that issue from the press, relative to this practice. I shall therefore attempt the task, of presenting at one view a general outline of that practice; which tends in so considerable a degree to alleviate the miseries of suffering humanity.

Having heard from the President of the Medical Society, some account of the species of inoculation proposed by Dr. Jenner, before his dissertation on the subject appeared, I conceived an early prepossession in its favour; and anxiously waited for an opportunity of giving it a fair trial. I was the less surprized at the proposed substitute for the small-pox; having often been asked by my patients, whether the chicken-pox did not prevent it? which I knew it did not; and whether the Cow-pox did not prevent it?—a question which I was unable to resolve.

Since the introduction of the new practice, I frequently meet with persons. who have long known the prophylactic virtue of the Cow-pox; several of whom, having had that disorder in the casual way, have thus been preserved from the small-pox, though exposed to its infection.

This I mention only to prove, that the idea of the Cow-pox being a security against the small-pox, is by no means new; and I hope I shall be able, in some measure, to correct that vulgar error, which is

now the greatest obstacle to the general introduction of the practice.

Dr. Jenner never has claimed the merit of discovering the prophylactic power of the vaccine virus; but he is fully entitled to the praise of converting that discovery to general advantage. He is the first, who made a regular series of experiments with vaccine matter, with an intention of superseding and extinguishing the small-pox; and the first who discovered, that the vaccine poison possessed the same specific properties, when transferred from one human being to another. Thus he pointed out at once, the source from which this inestimable blessing is derived; and the means by which it may be communicated to the whole human race.

From his unrivaled fame I derogate nothing, in saying, that the discovery of the Cow-pox being a preservative against the small-pox, is not new. I conceived it my duty to mention the circumstance, because artful men have endeavoured to deter the public from availing themselves of the vaccine inoculation, by pretending that its preservative power was never heard of till now.

The use of the telescope was known, before Galileo employed it in the discovery of new worlds; and the magnetic power of the loadstone, before it was applied to the important purposes of navigation. In like manner, the virtue of this sovereign prophylactic

was partly known ; but it was reserved for a Jenner, to extend its use, and proclaim its superior excellence to mankind ; it was reserved for a Jenner, to annihilate a disease, which is every hour consuming its victims, and spreading desolation through the world.

I shall now give a concise account of the origin of the vaccine virus ; the modification it undergoes, and its wonderful effect.

The horse, it is well known, is subject to a disorder in the heel, called the grease. This, we are informed by Dr. Jenner, is endowed with the same prophylactic virtue as the vaccine virus, but in a slighter degree. In the dairy counties, men who have the care of horses, are sometimes also employed to milk the cows ; and thus, for want of due attention to cleanliness, convey infectious matter from one animal to the other. Hence is generated the disease, called the Cow-pox ; which is communicated to the hands of the milkers, and from the hands of the milkers it spreads through the farm.

It appears on the teats of the cows, in the form of irregular pustules, surrounded with inflammation. The colour of the pustules is a palish blue, approaching to livid. The animals become indisposed ; and the secretion of milk is much lessened. Solutions of vitriolum zinci, vitriolum cupri, &c. are a speedy remedy for the pustules ; otherwise they degenerate

into phagedenic ulcers, which prove extremely troublesome.

Similar effects are produced on the hands of the milkers; attended with febrile symptoms, and tumours in the axilla. These symptoms, Dr. Jenner thinks, arise principally from the irritation of the sores. Vesications and sores of the same kind may take place in other parts of the body; in consequence of their being scratched, and impregnated with virus, by the fingers of the patient, or any other cause.

Dr. Jenner observes, that morbid matter of various kinds may excite a disease in some degree similar; “but what renders the Cow-pox virus so
“extremely singular, is, that the person who has
“been thus affected, is for ever after secure from
“the infection of the small-pox; neither exposure to
“the variolous effluvia, nor the insertion of the mat-
“ter into the skin, producing this distemper.”

Having pointed out the distinction between the genuine Cow-pox and the spurious, “lest the want
“of discrimination should occasion an idea of secu-
“rity from the infection of the small-pox, which
“might prove delusive,” he lays before his readers a great number of instances, in support of this extraordinary fact.

The substantial evidence brought forward by Dr. Jenner, must convince every unprejudiced reader,

that his opinion is founded on a solid basis. In the course of this treatise, I trust I shall be able to confirm that opinion by a number of incontestible proofs.

The practice of inoculating with vaccine matter, is introduced under the most happy auspices. It was first ushered into the world by a physician, endowed with every accomplishment that can adorn his profession; it was then adopted by others, who have distinguished themselves in similar pursuits. It is not long since the first ray of this science began to dawn; but our present success affords a certain presage, that it will soon shine forth in full splendor.

There are, however, some persons, equally hostile to all excellence, and to all improvement, who declare open war against this new light; like the bat, which cannot endure the face of day. One of them intimates, in the Gentleman's Magazine, that he is determined to go to church through the same dirty road, where his ancestors trudged before him; that if his ancestors had worshipped Belzebub, he would have worshipped Belzebub also; that he wishes to practise physic, as he always has practised it,—and that he is a sworn enemy to all *innovation*, in religion, politics, and *physic*.

If innovation in the practice of physic is to be excluded,—adieu to all improvement! It is therefore

to be hoped, that all those who entertain the same sentiments, already practice it in perfection!

For the sake of others, who have not attained that consummate excellence, so devoutly to be wished,—who consider medicine as in a progressive state,—and, with Hippocrates, deem it an art only to be matured by length of time,—I shall extend my researches; and endeavour to collect, from every quarter, the testimonies advanced in favour of this practice, and the objections urged against it.

To those who have perused all that has been written in its behalf, and seen the disease under the mild aspect which it now assumes, any farther attempt to recommend it, may appear like a waste of argument; but having considered the prejudices that still prevail, owing to ignorance and misrepresentation, I esteem it a sacred duty to try to dispel the mist, and free the mind from delusion.

No improvement in the annals of medicine, can boast superior merit to that which we now celebrate; or has a juster claim on public gratitude.—If the feelings of others are in unison with mine, its author will ever be ranked among the greatest benefactors of mankind:—*namque homines nunquam propius ad deos accedunt, quam salutem hominibus dando.*

If he who saves the life of one citizen, deserves the civic crown,—what thanks, what honours, what

rewards, are not due to him, who by the unwearied diligence he has exerted, and the singular abilities he has displayed, will save the lives of millions?

If divine honours were paid to Hippocrates at Athens,—what remuneration shall he receive, whose more successful toil subdues that formidable hydra—the small-pox?—So universal a plague as this never existed; nor one that has committed such dreadful ravages over the whole face of the globe.

The beneficial effects of this inoculation are now manifest, and the practice begins to be well established. If our future success shall be commensurate with the present, and with our just hope,—surely some appropriate return, some adequate acknowledgment, will be made, if any acknowledgment can be adequate, for such a signal and transcendent service.

These observations, I humbly conceive, will not appear tedious, or superfluous, to any liberal and ingenuous mind. When I contemplate the magnitude and importance of this grand improvement of the healing art, and the beneficial consequences that will thence accrue to all mankind, in all ages,—I feel an enthusiastic veneration for its author;—who comes amongst us as a guardian angel, to stay the pestilence!

“ Oh! while adown the stream of time thy name

“ Expanded flies, and gathers all its fame,—

“ Say, shall my little bark attendant sail,
 “ Pursue the triumph, and partake the gale!”

It is remarked by Bacon*, that among natural bodies, none is compounded of such a multiplicity of substances as the human body; that vegetables are nourished by earth and water,—animals by vegetables,—man by the flesh of those animals, beasts, birds, and fishes,—and also by vegetable substances, such as herbs, grains, fruits, juices, and various liquors; not without a multiplicity in the mixing, seasoning, and preparation of those articles, before they become food for man.

He adds, that, in animals, the mode of living is more simple,—the affections acting on the body fewer, and operating almost in the same mode; whereas man, from the places of his habitation, from his exercises, affections of the mind, sleep, and watchfulness, undergoes almost an infinite variety of vicissitudes and changes. So true it is, that the human body is, of all things, the most fermented, and formed by an assemblage of the greatest number of ingredients.

He subjoins: “ The effect of this various and subtle composition and fabric of the human body, is, that it is like an elaborate and exquisite musical instrument, which is easily put out of tune.”

* De Augm. Scient, lib. iv. c. 11.

Some persons may think, that a proposition so self-evident needed not the authority of a great philosopher to confirm it;

I answer: It is,

“What oft was thought, but ne’er so well express’d.”

Who could have imagined, that a prejudice would arise in any human mind against the vaccine virus, on account of its being a bestial humour? That omnigenous mass, the human body, is formed by the conflux of all sorts of humours, from all sorts of animals, as well as vegetables; and not likely to be tainted by the juices of an animal, whose food is the herb of the field, whose beverage is the limpid stream.

Could the brute animal be infected, by the insertion of morbid poisons that originate in the human body, his blood might indeed be contaminated; but providence has kindly interposed, and placed an insurmountable barrier, to frustrate such unnatural attempts, by rendering the brute animal insusceptible of human contagion.

Whether so absurd a prejudice was ever entertained in reality, or only affected, in order to deter the public from adopting the new practice, it is not easy to determine. Fortunately, however, the public in general exercise their own reason, and spurn

the prejudice with disdain. They know, and consider, that not only the animals to which we are indebted for this powerful antidote, live on the most pure and simple diet; but that they are the most healthy of all animals; and that the most healthy of all the human species, are those who make the milk and the flesh of such animals a part of their food.

But why enlarge on this topic? The nature of matter cannot be bad, when its effects are good; and to reject a benefit, on account of its *bestial* origin, is to betray a want of reason *more than bestial*. The brute creation, in the choice of good and evil, are guided by an instinct, that may put our boasted human reason to the blush!

It was of no small consequence to trace out the origin of this disease; for as, on the one hand, it will be conducive to the cleanliness of the dairy, by teaching persons employed in milking, how to avoid communicating the contagion to the cow; so, on the other, it will enable medical practitioners to regenerate the virus, when extinct.

After relating several instances, where cows, milked by men who had been dressing the heels of a horse, were attacked with the disease, Dr. Jenner remarks, that although he had not been able to confirm the truth of his opinion, that the morbid matter springs from that source; it appears to be sufficiently established by the evidence adduced.

He observes, that persons "not in the habit of conducting experiments, may not be aware of the coincidence of circumstances necessary, for their being managed, so as to prove perfectly decisive:" however, he feels "no room for hesitation, respecting the common origin of the disease; being well convinced, that it never appears among the cows (except it can be traced to a cow introduced among the general herd, which has been previously infected, or to an infected servant), unless they have been milked by some one, who, at the same time, has the care of a horse affected with diseased heels."

A cold and wet spring, says Dr. Jenner, is favourable to the production both of the grease and of the Cow-pox. He moreover informs us, that "the active quality of the virus from the horse's heels is greatly increased, after it has acted on the nipples of the cow; as it rarely happens that the horse affects his dresser with sores, and as rarely, that a milk-maid escapes the infection, when she milks infected cows."

The virus, he tells us, is most active at the commencement of the disease, before it has acquired a puriform appearance: and he suspects that the matter loses its specific property, when it is secreted in a purulent form.

He is of opinion, that it is the thin, darkish-looking fluid only, oozing from the newly-formed cracks in the heels, similar to what is sometimes discharged

from erysipelatous blisters, which gives the disease. Experiments which he has often made, with matter procured from old sores on the heels of horses, tend to corroborate this opinion.

Other gentlemen having also made ineffectual attempts to excite the disease in this manner, it was concluded by the public in general, that Dr. Jenner's hypothesis was ill-founded; but, exclusive of substantial proofs, which I have known him enumerate in private conversation, and those advanced in his first publication on this subject, he has since brought forward additional evidence to strengthen his argument.

Besides other reasons adduced, for his entertaining that idea, he acquaints us, it is the popular opinion throughout that great dairy country; and particularly insisted on by those who attend the diseased cattle.

He maintains, that the experiments published, with the view of refuting this theory, appear to have but little weight; as even the Cow-pock virus itself, when repeatedly introduced into the sound nipples of cows by means of a lancet, was found to produce no effect.

From him I learn, that although inoculation with a lancet fails, and the matter, after digestion has taken place, seems to lose its virtue, yet a veterinary surgeon has at length succeeded in producing the

disease artificially in a cow, by removing a scab from the teat, and applying the recent blackish matter of grease to the absorbing surface of the sore.

Dr. Jenner now informs me, that he has lately received other satisfactory proofs, from several quarters, of the Cow-pox being excited artificially by the matter of grease.

A letter I received, while writing these remarks, from Mr. Rankin, a surgeon, of East Bourne, tends in a peculiar manner to confirm the idea of Dr. Jenner.

After giving an account of the success attending his practice, in inoculating for the Cow-pox, with matter sent by me, he relates the following curious and interesting case.

“ As I have somewhere seen it suggested, that the vaccine disease originated in the greasy heels of a horse, I will take the liberty to recite a case I met with here, about twelve months since, and before I had read any account of the Cow-pox.—I was sent for to see a farmer, who had a number of exceedingly foul, phagedenic-looking spots, on his face and hands, about his mouth and chin especially; attended with a very considerable degree of fever, a full, quick pulse, violent head-ach, foul tongue, thirst, &c. and the places gave him much pain.

“ It appeared a kind of eruption I had never seen before; nor could I account for it any rational way. The spots looked rather like very large pocks, full of a semipellucid fluid; *raised much at the edges, indented in the centre*, and surrounded with a livid erysipelatous inflammation which swelled the whole face, as there were more than a dozen of these pustulous ulcers.

“ I was at a loss for the cause; but at that very time Capt. Mowatt shewed me an account of the disease in question, in a review.

“ On making inquiry, at my next visit, about his cows, &c. the farmer told me, that he had, a few days before the appearance of this disease, been dressing the heels of his horse for some scratches; that he had observed some drops of a fluid spirt from the hairs of his horse's heels into his face; and that he had just before been shaved.

“ From every circumstance attending the case, and the description I then read, I have not the least doubt but his disorder proceeded from the heels of the horse; whether it had any analogy to the Cow-pox or not.

“ The ulcers were very difficult and long in healing; nor did the fever subside under a week.—He had no complaint in the axilla; though he had three or four spots on one hand.

“ He had a servant boy affected in the same way, and evidently from the same cause, though not so violently ; having only, as far as I can recollect, a spot or two on the upper lip, and one or two on the hands ; attended with a degree of symptomatic fever, but no pain in the axilla.

“ I hope you will excuse the prolixity of this ; as I should be extremely happy to be the means of throwing any light on the disease ; or of promoting a discovery, that promises such inestimable benefit to mankind.”

This case, for which I am much obliged to Mr. Rankin, bears so near a resemblance to the casual Cow-pox ; that we have great reason to conclude, they both spring from the same source.

A testimony like this, drawn up without any solicitation, by an unprejudiced person, cannot but have considerable weight, in determining the true origin of the vaccine disease.

Dr. Turton, of Swansea, expressed to me an opinion, which he has since published in the Monthly Magazine, that this distemper derived its origin from the small-pox. The circumstance of its breaking out among the cows in his father's farm, in two different instances, a short time after the small-pox had been in the family, seemed to warrant that conclusion.

He added, that, in order to ascertain this point more clearly, he had directed a cow to be inoculated with variolous matter; and, if it produced any suppurative eruption, he would inoculate a child with the vaccine matter, and communicate the result.

As no farther communication from Dr. Turton has appeared, we have reason to suspect that his experiment failed.

An able answer to the letter of Dr. Turton appeared in a subsequent number of the same work; written by a gentleman, whom I suspect from his initials, and the knowledge of the practice which he displays, to be a relation of Dr. Jenner.

This answer tends to refute all ideas of the vaccine disease degenerating in the human body, and of its identity with the small-pox. It proves, that such ideas could only be entertained by those, who had not seen much of the distemper: the author of that letter had seen the disease resuscitated above thirty times in the human subject; nevertheless it still retained its original form.

A considerable part of the matter now in use, has been preserved, by reiterated inoculations in the human body, ever since the spring of the year 1799; yet, notwithstanding it has undergone so many successive trials, its purity has suffered no alloy, and its efficacy no diminution.

At the time when Dr. Turton wrote his remarks, appearances justified his suspicion. Some of the matter which was then in use, was either partly, or entirely, variolous. Indiscreet experiments were made. The virus became contaminated. Sometimes the Cow-pox combined with the small-pox, and sometimes the small-pox alone, seemed to be the consequence.

One instance has come to my knowledge, where a practitioner used a lancet armed with small-pox matter, by mistake. He dipped it in the Cow-pox pustule, it is true ; but it was at a late period of the disease, the twelfth day, when the virus may be supposed to have lost its efficacy, and to have become effete. It had also been repeatedly punctured and exhausted some days before ; so that it must have undergone the greater change, both from the evacuation of its contents, and the admission of atmospheric air.

The disease produced was the genuine small-pox ; and, although it terminated well, would have brought some discredit on the new process, had not the practitioner, with a degree of candour that does him great honour, confessed his mistake.

Though pustules, resembling the small-pox, have now and then occurred, in cases where it is not known that variolous matter was inserted ; yet such occurrences have been rare, and the eruption has not been very considerable.

Besides, it is well understood, that such eruptions may arise from other causes. I have known pustules, when produced by external applications, by the chicken-pox, the herpes miliaris, and other disorders, so nearly resemble the small-pox, as not to be distinguishable by their appearance, from that disease.

In one of the first five patients whom I inoculated with matter, which Mr. Paytherus gave me, by desire of his friend Dr. Jenner, pustules, exactly similar to those of the small-pox, appeared about the eleventh or twelfth day. Since that time, I have inoculated above seven hundred with the same matter. It has been disseminated, not only through all parts of this great metropolis, but through the whole kingdom, and to various parts of Europe and America; yet I have not heard of another case, where there was any material eruption.

This matter was produced by some which had been received from Dr. Jenner. It has now been in constant use ever since the vaccine inoculation began to be established, yet it never has occasioned an eruption that could alarm the most timorous parent; and in general, not a single pustule, except that on the arm.

At the conclusion of his paper, Dr. Turton puts the following query: "May not the Cow-pox, by passing through the human subject too frequently, degenerate at last into its original disease, the small-

pox? and should not this direct the practitioner to have recourse, as often as possible, to genuine vaccine matter?"

Certain experiments, made when the nature of the true Cow-pox was not well understood, justified that apprehension. The first appearances were fallacious. Time has now drawn aside the veil; and in some measure elucidated a point, which then lay enveloped in obscurity.

The genuine Cow-pock virus, having now so often passed the ordeal of the human body, and having been put to the severe test of so many successive inoculations, betrays not, at this moment, the least sign of degeneracy; the least sign of taint, the least sign of change, or of approximation to the small-pox.

In order the more effectually to remove all prejudices that prevail, relative to the origin and nature of the vaccine distemper, I shall adduce other arguments to prove, that it is radically and essentially different, and distinct from the small-pox.

That celebrated physiologist Mr. Hunter, in his Treatise on the Blood, says: "In all complicated animals, among which man is the most complex, the parts are composed of different structures; and we find that in such animals, the powers of action of those different structures, within themselves, are very different: when, therefore, they are excited to any

common action, the varieties produced should be well known, and particularly attended to. Besides, every similar structure, in different animals, does not always act in the same manner. Thus, we cannot make a horse vomit; *nor can we give many specific diseases, which attack the human subject, to any other animal; more particularly the morbid poisons.*"

Dr. Darwin, in his *Zoonomia*, sect xxxiii, 1. 5. confirms what is here alleged by Mr. Hunter. He there endeavours to explain, why none of our contagions, as the small-pox, or measles, can be communicated to brute animals; though theirs can be communicated to mankind.

Dr. Pearson, in his "Inquiry concerning the history of the Cow-pox," says: "Morbific poisons which produce specific diseases, act in this way only on one species of animals; except in a few instances such as the hydrophobic and Cow-pox poisons. Camper, Ingenhousz, and Woodville, in vain attempted to produce the small-pox by inoculation, in a number of brute animals. J. Hunter failed, in attempting to excite the syphilis in a dog, by inoculating him with the poison of the gonorrhœa, and of a syphilitic ulcer. Camper attests, that in the most malignant epizootic murrain, which spread most rapidly among oxen, other animals, such as sheep, horses, asses, dogs, &c. were not infected by associating with the distempered oxen; nor even by feeding with them, in the same compartments of a stable."

“ In the eruptive contagious disease among sheep in France, forty years ago, other species of animals which associated with them, were not infected.

“ The newly observed disease which prevailed among domestic cats, in 1796, throughout great part of Europe, and even America, did not appear to affect other animals.

“ These observations may serve to remove the fears of those, who apprehend, that in consequence of domesticating brute creatures, we are liable to render their diseases endemial.”

An additional proof that cows are insusceptible of the small-pox, may be deduced from Dr. Woodville's reports of a series of inoculations for the Variolæ Vaccinæ, &c. where he asserts, that Mr. Coleman caused one of his cows to be inoculated with variolous matter; but without effect.

As the small-pox has been suspected to give rise to the Cow-pox, so has the Cow-pox in its turn been suspected, by Jenner and others, to be the source of the small-pox.—This opinion remains, and I trust ever will remain, unconfirmed; otherwise, we may be disappointed in our fond hope, of superseding, and extinguishing for ever, that dreadful disease.

Dr. Jenner asks, whether it “ may not reasonably be conjectured, that the source of the small-pox is

morbid matter of a peculiar kind, generated by a disease in the horse; and that accidental circumstances may have again and again arisen, still working new changes upon it, until it has acquired the contagious and malignant form, under which we now commonly see it making its devastation amongst

us?"

An hypothesis of little moment in itself, may become important, from its creating a prejudice in the public mind. Did I not conceive, that the speculative opinion, and ingenious conjecture, hazarded by Dr. Jenner, might have a tendency to deter many persons from adopting the practice he recommends, I should not urge one argument against them.

In a letter which Dr. Jenner did me the favour to send me, in consequence of some remarks I had published on the subject of the vaccine disease, are the following expressions: "From variolated pustules one cannot be surprised to hear, that a disease has been communicated by effluvia. By no means that I could devise, have I been able to infect a person by the effluvia of the simple Cow-pox pustule; although I have tried several. Among others, I have suffered children, two or three times in a day, to inhale by the mouth and nostrils, the effluvia of pustules on the arms of others, when the matter has been in its most active state, and the pustules punctured in several places, to give the matter its fullest effect.

“ There is another strong fact, that strengthens the supposition of the matter's being contaminated: the variolous appearance among the patients is more and more retiring. Out of the last one hundred and ten cases, Dr. Woodville remarks, only seven had pustules.

“ The Cow-pox then maintains its ground, having nearly destroyed the co-operating effects of the small-pox: *and this event gives strength to what I have from the commencement of my experiment imagined; that the latter is a malignant variety of the former, the parental root being the Cow-pox.*”

It is with great reluctance I dissent, and with great diffidence express my dissent, from the high authority of Dr. Jenner. But I cannot help remarking, that from the same premises I draw a contrary conclusion; and am inclined to think, that if the small-pox were a virulent species of Cow-pox, and a malignant variety of that disease, it would never lose that virulence, nor deposit that malignity, while in its own element, the human body.

Whatever may be the source of the small-pox, I trust I have here brought forward abundant proofs, that the Cow-pox is not disposed to lose its pristine character, nor to degenerate into that disease; and that the virus, when inserted pure, remains unchangeable.*

* Since these remarks were written, I have the authority of Dr. Jenner to assert, that he is fully convinced it cannot be

Whatever shade of difference there may be, on this or any other occasion, between the sentiments entertained by Dr. Jenner and myself, respecting the theory of this distemper, I know of no material difference in our opinions, in regard to practice; and am inclined to hope, that the remarks here presented to the public, will rather excite than allay a thirst for perusing his observations.

Dulcius ex ipso fonte bibuntur aquæ.

Whatever doubts are entertained concerning the double origin of the vaccine virus, recent experiments will probably remove them. Dr. Jenner did me the favour, to send me some matter which he had just received from Mr. Tanner, a veterinary surgeon of Rockhampton, near Berkeley in Gloucestershire.

Matter taken from a cow which Mr. Tanner had inoculated, and some taken from the dairy maid who had caught the infection from the cow, were inclosed in a letter from Mr. Tanner to Dr. Jenner, which is now in my possession.

In this letter he says, four or five of his uncle's cows had the disease; that it first appeared in a cow which he had inoculated from the heel of a horse, and was thence communicated to the man who milked that cow; and afterwards to the other cows, and two other men, and the dairy maid.

through the medium of the human body, that the Cow-pox can suffer a degeneracy into the small-pox.

The matter was taken on the 12th of May, on cotton thread. On the 18th of the same month, and one or two following days, I inserted some of that which was taken from the cow; but it proved ineffectual. This is not to be wondered at, for Mr. Turner mentions in his letter, that when the disorder broke out, he was absent; and that the cow's teats had been anointed by his uncle, and the disease was in some degree destroyed.

With the matter from the dairy maid, which was inserted on the 20th day of the month, a proper pustule was excited, bearing every characteristic of the true Cow-pox. In other instances, where this matter was inserted, it proved successful. Many of those who were inoculated with matter proceeding from this stock, have been repeatedly subjected to the test of variolous contagion; but in vain.

In his further observations on the *variola vaccinae*, Dr. Jenner very ably vindicates himself from all imputation of credulity, respecting the primary source of this disease. One argument, however, which is not at all necessary to his defence, is founded on erroneous information.

It is drawn from the supposed "total absence of the disease in Ireland and Scotland, where," he says, "the men servants are not employed in the dairies." I have, however, heard him relate the following anecdote:—Two peasants, who lived on a nobleman's

estate in Ireland, having been compelled to milk the cows in the park, were considered by their neighbours and fellow servants, as utterly unfit for all society. Had they committed murder, they might have found some kind friend to speak to them, and associate with them; but they had been guilty of a much greater crime, that of *milking cows*.

This, it seems, is sufficient in that country, to excite detestation and abhorrence; and these unfortunate men were obliged to leave their homes, and enlist into the army. Whether the gallant Hibernians wish to discourage all encroachments on the province of the fair sex, or the dairy maids of Ireland suffered as great inconveniences as those of Gloucestershire from milking with the men, it is not easy to determine.

The preceding narrative, while it proves, that Dr. Jenner's first information on this head was not perfectly correct, serves to reconcile his opinion of the rise of the distemper to probability; otherwise it must fall to the ground; for I have just been reading in the Medical and Physical Journal, a letter from Dr. Barry of Cork, giving an account that the vaccine disease has long been known in that kingdom.

From Dr. Barry's communication it appears, that some of the country people in Ireland are well acquainted with the disease; and describe it very accurately. It is known by the name of Shinah.

Dr. Barry adds the following valuable and interesting intelligence:—"They have long attributed to it the anti-variolous power, which renders it so important a discovery to the happiness of mankind. I met with two people who had been themselves affected with the complaint.

"A lady shewed me the mark of it on one of her hands. She had it about forty years since; and was then informed by some of her neighbours, that she never would have the small-pox; but gave little credit to their assertions. She has, however, since been frequently exposed to the infection; and, in consequence of her incredulity, received several frights, particularly during the illness of her children, who had the small-pox rather heavily; but though she attended them very closely through the whole of their complaint, she did not take it herself.

"The other person is a gardener, who lives with a country gentleman of my acquaintance. He gave himself the Cow-pox purposely, by rubbing himself against some person who was affected with it; from a conviction that it would prevent the small-pox. This happened several years ago; and though he has often put himself in the way of the small-pox infection, and even lain in the same bed with his children, when they were covered with it, he has not taken the disease.

"If I had time to make the necessary inquiries,

I am sure I could multiply instances of this kind; as I heard of many others who had the Cow-pox, and escaped the small-pox in the same manner. But as I saw and conversed with these two, who are people of undoubted veracity, I believe they will prove sufficiently satisfactory to you."

Thus it appears, that our neighbours in the sister island are acquainted with the disease; and with its virtues, as a safeguard against the small-pox. It appears also, that one person voluntarily inoculated himself; and effectually shielded himself against that dreadful malady. It is said, that the vaccine distemper has also been discovered in the Duchy of Holstein; and we have no room to doubt of its existing in other parts of the world.

That the Cow-pox effectually secures the human body from variolous contagion, every day now furnishes a variety of proofs. Invidious reflections have been thrown out, because the discovery of the virtue of this inestimable prophylactic was not new. What Dr. Jenner lays claim to, is the discovery, that vaccine virus may be regenerated in the human frame; which he many years ago mentioned to Mr. Hunter. Thus he proved that a general inoculation of the Cow-pox, as a substitute for the small-pox, was practicable. The discovery of the antivariolous power of the vaccine virus was made long ago: to diffuse the benefits of that discovery, was reserved for the genius and abilities of a Jenner.

The era of the commencement of this practice is known; but that of inoculation for the small-pox is involved in obscurity. The latter, in this kingdom, is generally, but erroneously referred, to the time of Lady Mary Wortley Montague. In the London Medical Journal, I long ago produced incontestible evidence, that the practice had not only prevailed in other parts of the world, as was commonly understood; but had also existed in this kingdom from time immemorial; though not in the hands of medical men.

To this digression I was led, by Dr. Barry's valuable memoirs. In regard to the etiology of the vaccine disease, I am more and more confirmed in my opinion, that it originates from the source, to which it is ascribed by Dr. Jenner. By him I have been introduced to his friend Dr. Marshall, of Stonehouse, in Gloucestershire; so eminently distinguished for his extensive and successful labours, in the same vineyard with himself. He was some time in London, before he set out on his voyage for Naples; with a view to propagate the late improvement in the practice of medicine, and put a stop to the ravages of the small-pox in that part of the world.

From him I learn, that when he was attending a farmer's child, whom he had inoculated with vaccine matter, he observed on the hands of a dairy maid, about half a dozen fine pustules, resembling the Cow-pox. He soon discovered that the contagion

proceeded from the cows; but was at first told, it could not possibly originate from the horse, as there were no men who milked the cows on that farm.

At length, however, he was able to trace the poison to its real source. The farmer's son recollected, that one morning he milked a cow that was rather untractable, after dressing the heels of a horse.

To conclude this subject, Dr. Jenner informs me, that he has received a letter from Mr. Fermor, of Tusmore, who, to other attainments in various sciences, adds a considerable proficiency in that of medicine. This gentleman has set a laudable example to the medical practitioners in his neighbourhood, by introducing the mild species of inoculation; and has since favoured the world with the result of his experience. In his letter he mentions, that he is now perfectly convinced, the vaccine disease is originally derived from the horse; and that Sir Christopher Pegge has complete evidence of the fact.

On these authorities, and those before adduced, I shall for the present leave the genealogy of the distemper to rest; and proceed to examine the modification which the matter undergoes in the nipples of the cow.

Here I must again have recourse to the fountain-head of knowledge, respecting this subject. It is only from Jenner's Inquiry into the Causes and Ef-

fects of this disorder, that I can illustrate this obscure point.

The author there tells us, that one instance has occurred to him, of the system being affected by the matter issuing from the heels of a horse, and of its continuing insusceptible of the variolous contagion; another, where the small-pox appeared obscurely; and a third, in which its complete existence was positively ascertained. We are also informed, that, in consequence of this uncertain and imperfect prophylactic, farriers in general, either have the small-pox in an anomalous manner; or entirely resist its contagion.

Dr. Jenner states, that his researches were interrupted from the year 1796 till the spring of the year 1798; when, from the wetness of the early part of the season, many of the farmers' horses in his neighbourhood were affected with sore heels; in consequence of which the Cow-pox broke out in several dairies, which afforded him an opportunity of making further observations upon this curious disease.

Three men, who had been washing the heels of a mare which had the grease, "became affected with sores in their hands, followed by inflamed lymphatic glands in the arms and axillæ; shiverings, succeeded by heat, lassitude, and general pains in the limbs. A single paroxysm terminated the disease; for within twenty-four hours they were free from general indis-

position; nothing remaining but the sores on their hands."

Two of these men, who had gone through the small-pox from inoculation, described their feelings as very similar to those which affected them, on sickening with that malady. One of them was daily employed in milking; and, about ten days after he first assisted in washing the heels of the mare, the disease began to shew itself among the cows, in the form of bluish pustules; but a timely application of proper remedies prevented their nipples from ulcerating to any considerable extent.

Two years previous to this occurrence, Dr. Jenner had made the memorable experiment, of inoculating a human subject, first with vaccine, and afterwards with variolous matter.

"On the seventh day after inoculation with Cow-pock matter, the patient complained of uneasiness in the axilla; and on the ninth, became a little chilly, lost his appetite, and had a slight head-ach. During the whole of this day, he was perceptibly indisposed, and spent the night with some degree of restlessness; but on the day following, he was perfectly well."

Such were the constitutional symptoms, in Dr. Jenner's first experiment of inoculation for the Cow-pox. In general they are still slighter; and, in a majority of cases, imperceptible.

The appearance of the incisions, in their progress to a state of maturation, were much the same, as when produced in a similar manner by variolous matter. An efflorescence surrounded the incisions; but disappeared, without giving either Dr. Jenner or his patient the least trouble.

“In order to ascertain,” says Dr. Jenner, “whether the boy, after feeling so slight an affection of the system from the Cow-pox virus, was secure from the contagion of the small-pox, he was inoculated the 1st of July following, with variolous matter, immediately taken from a pustule. Several slight punctures and incisions were made on both his arms, and the matter was carefully inserted; but no disease followed.—Several months afterwards, he was again inoculated with variolous matter; but no sensible effect was produced on the constitution.”

Thus the Cow-pock virus at first appeared, and still appears, to be an infallible preventive, and a faithful guardian of the constitution, against the infection of the small-pox. On the contrary, the fluid from which it is generated, is but a precarious antidote, and an equivocal security against that formidable contagion.

What particular change the matter undergoes, during its transmigration, it is at present impossible to determine. Physiologists are not yet able to penetrate into the great laboratories of nature so far, as

to discover that mystery. All that we know is, the virus, when re-excited in the second species of animal, possesses properties it did not possess before : *vires acquirit eundo*.

Having given such an account of the origin and modification of Cow-pock matter, as our present state of knowledge will admit; I shall now attempt to elucidate the last point on which I proposed to treat, namely, its wonderful effect in the human body.

Were I to recite all the arguments brought forward by Dr. Jenner alone, to prove that vaccine virus in its perfect state, is a security against variolous contagion, no unprejudiced reader could deny, that I had sufficiently established this position. But artful and designing men have deluded the public by false representations. One of them, when repeatedly called on, actually refused to give that evidence of the truth of his assertions, which he had publicly pledged himself to give; and shrunk from all enquiry.

In the course of this work, I shall prove the safety and efficacy of the vaccine inoculation, by the testimonies of some of the brightest ornaments of the medical profession. A considerable number of others might be added, did the cause require such support. Nothing can recommend a practice more effectually, than the names I shall adduce, unless I were to mention the names of those who have set themselves in array against it.

Some few respectable practitioners have been deluded by false reports, and expressed their apprehensions in a becoming manner; but there are certain persons in the lower order of the profession, who rise up in arms against it:

Omnigenûmque deûm monstra, et latrator Anubis,
Contra Neptunum et Venerem, contraque Minervam
Tela tenent.

Previous to Dr. Jenner's publishing his first dissertation on this subject, he was convinced, from diligent observation and long experience, that the casual vaccine disease was exempt from danger; that it was rendered still milder by inoculation; that by transmission through the human subject it lost none of its original properties, and that it was a permanent security against the small-pox. For the minute detail of the data on which these conclusions are founded, I must refer my readers to the work itself.

In his "Further Observations on the Variolæ Vaccinæ," Dr. Jenner remarks, that since the appearance of his first publication, Dr. Pearson had established an enquiry into the validity of his principal assertion, the result of which could not but be highly flattering to his feelings; and that it contains not a single case, which he thinks can be called an exception to the fact he was so firmly impressed with,—that the Cow-pox protected the human body from the small-pox.

He himself had received other confirmations of the

truth of his theory, which are subjoined.—But he tells us, that he had also received a letter from Dr. Ingenhousz, informing him, that, on making inquiry into the subject, in the county of Wilts, he discovered that a farmer near Calne had been infected with the small-pox, after having had the Cow-pox; and that the disease, in each instance, was so strongly characterised, as to render the facts incontrovertible. The Cow-pox, it seems, from the Doctor's information, was communicated to the farmer from his cows, at the time that they gave out *an offensive stench from their udders*.

“Some other instances,” adds Dr. Jenner, “have likewise been represented to me, of the appearance of the disease, apparently marked with its characteristic symptoms; and yet it has been asserted, that the patients have afterwards had the small-pox. On these cases I shall, for the present, suspend any particular remarks; but hope, that the general observations I have to offer in the sequel, will prove of sufficient weight, to render the idea of their ever having had existence, but as spurious Cow-pox, extremely doubtful.

“Ere I proceed, let me be permitted to observe, that truth, in this and every other physiological inquiry, that has occupied my attention, has ever been the object of my pursuit; and, should it appear in the present instance, that I have been led into error, fond as I may appear of the offspring of my labours,

I had rather see it perish at once, than exist and do a public injury."

Dr. Jenner had partly foreseen, that erroneous conclusions would occasionally be drawn from false premises, and excite doubts of the reliance to be placed in the efficacy of this inoculation. He had already described a spurious kind of Cow-pox, to prevent any person from being deceived by fallacious appearances and mistaking it for the true.

He observes, that, "pustulous sores frequently appear spontaneously on the nipples of the cows; and instances have occurred, though very rarely, of the hands of the servants employed in milking being affected with sores in consequence; and even of their feeling an indisposition from absorption.

"These pustules are of a much milder nature, than those which arise from that contagion which constitutes the true Cow-pox. They are always free from the bluish or livid tint, so conspicuous in the pustules of that disease. No erysipelas attends them, nor do they shew any phagedenic disposition as in the other case; but quickly terminate in a scab, without creating any apparent disorder in the cow.

"This complaint appears at various seasons of the year; but most commonly in the spring, when the cows are first taken from their winter food, and

fed with grass. It is very apt to appear also, when they are suckling their young."

Dr. Jenner saw with a prophetic eye, the blunders that might be committed by persons ignorant of the true characteristics of the Cow-pox, when he concluded his description of the spurious sort in the following impressive words:—"This disease is not considered as similar in any respect to that of which I am treating; as it is incapable of producing any specific effects upon the human constitution: however it is of the greatest consequence to point it out here; lest the want of discrimination should occasion an idea of security from the infection of the small-pox, which might prove delusive."

In his second publication on this subject, Dr. Jenner enumerates other sources of spurious Cow-pox, in the human body; one, where it is produced by the spurious disease in the brute animal,—another where it is produced by genuine matter, which has suffered a decomposition before it is taken from the cow,—and another where it is produced by genuine matter, which has suffered a decomposition after it is taken from the cow.

On these subjects, he proceeds to offer some comments.—After observing, that it is not in his power to determine, to what length pustulous diseases in the udder and nipples of the cow may extend, and that many of these eruptions may transfer infection

to the human body, he very judiciously admonishes those who are engaged in this investigation, to suspend controversy and cavil, until they can ascertain with precision, what is, and what is not, the genuine Cow-pox.—Such was the prudent advice he gave; but, alas! how many have been deaf to his admonition!

The necessity of observing this precaution, he illustrates by the following example:—"A farmer who is not conversant with any of these maladies, but who may have heard of the Cow-pox in general terms, may acquaint a neighbouring surgeon, that the distemper appears at his farm. The surgeon, eager to make the experiment, takes away matter, inoculates, produces a sore, uneasiness in the axilla, and perhaps some affection of the system. This is one way, in which a fallacious idea of security, both in the mind of the inoculator and the patient, may arise; for a disease may thus have been propagated from a simple eruption only.

"One of the first objects then, of this pursuit, as I have observed, should be, to learn how to distinguish with accuracy, between that peculiar pustule which is the true Cow-pock, and that which is spurious. Until experience has determined this, we view our object through a mist. Let us, for instance, suppose, that the small-pox, and the chicken-pox, were at the same time to spread among the inhabitants of a country which had never been visited by either of these distempers, and where they were

quite unknown before : what confusion would arise ! The resemblance between the symptoms of the eruptive fever, and between the pustules, in either case, would be so striking, that a patient, who had gone through the chicken-pox to any extent, would feel equally easy, with regard to his future security from the small-pox, as the person who had actually passed through that disease. Time, and future observation, would draw the line of distinction.

“ So, I presume, it will be with the Cow-pox, until it is more generally understood. All cavilling therefore, on the mere report of those, who tell us they have had this distemper, and are afterwards found to be susceptible, of the small-pox, should be suspended.”

Thus Dr. Jenner anticipated the cavils and controversies that might take place, on this subject, from ignorance, inexperience and error ; but he little suspected to what wilful misrepresentations his theory would give rise ; and what temporary shocks it would sustain, from the most palpable perversions of truth, and from the pens of fiction and imposture.

Ah ! sly deceivers ! branded o'er and o'er,
Yet still believed !

When the first publication in favour of this practice appeared, serious apprehensions were entertained by some respectable members of the profession. Dr. John Sims in consequence of a representation made

to him of the inconveniences likely to result from Cow-pox inoculation, published in the first number of the Medical and Physical Journal, the case of a gentleman at Bristol; who, when young, twice had a disease which was supposed to be the Cow-pox; yet afterwards had the small-pox.

Hence Dr. Sims embraced the earliest opportunity, of warning the public against the introduction, of what was described to him as a loathsome distemper. He also, with a solicitude equally laudable, gave a timely caution against using lancets for the Cow-pox inoculation, that had been used for the small-pox;—a caution that cannot be repeated too often.

The disease, however, under which the gentleman of Bristol laboured, if it was contracted by milking, was evidently of the spurious kind; for he says “his right arm was in a state of eruption, both the first and the second time, from one extremity to the other.” He describes that with which he was afflicted, as one of the most loathsome of all diseases.

In November, 1798, Dr. Pearson published his “Inquiry concerning the History of the Cow-pox, principally with a view to supersede and extinguish the small-pox.”—In this work, he laid before the world a most valuable body of evidence, in favour of the Jennerian method of inoculation. This evidence, he collected by a most extensive correspondence, which he had established on that occasion.

Dr. Pearson tells us, that in Dr. Jenner's work, several facts are related, which seem to let new light into the nature of the animal œconomy: and to exhibit a near prospect of most important benefits in the practice of physic.

He adds, that Dr. Jenner had been occupied a long time in examining the fact, of the Cow-pox rendering the human body insusceptible of the small-pox; that he himself had been informed of it by Mr. Hunter, about nine years before; and had constantly related the circumstance, when on the subject of the small-pox, in every course of lectures which he had given since that time.

He observes that the fact had been mentioned in two publications; namely, by Mr. Adams, in his book on the Morbid Poisons, in 1795, and by Dr. Woodville in his History of Inoculation, in 1796. To these gentlemen, I am told, it was communicated by Mr. Cline; and to him by Dr. Jenner.

He then acquaints us, that Sir George Baker had been informed of it many years ago by his relation, the Rev. Mr. Herman Drewe, of Abbots; but as the statement did not then obtain credit, it was not published.

Thus we see, with regard to communicating this important circumstance to the world, that although the great event struggled in the birth, the fulness of

time was not yet come, and the philanthropic divine, who announced the discovery, was, like Cassandra,

“ Doom’d to declaim to unregarding ears.”

Mr. Giffard, surgeon, of Gillingham, near Shaftesbury, sent Dr. Pearson the following interesting intelligence: that it is a disease more known in Dorsetshire than in most other counties; that last winter he inoculated three parishes, and some of the subjects told him they had had the Cow-pox, and that they should not take the small-pox; but he desired to inoculate them. He did so two or three times; but without effect.

Dr. Pearson intimates, that in some places the chicken-pox, or swine-pox, is called by the lower orders of people Cow-pox. He adds, “ Mr. Giffard takes notice, that there are two kinds of Cow-pox; the one is attended with eruptions on the skin in general, and sometimes produces pits; but the other is a disease confined to the hands.”

From the preceding accounts it must appear evident, that several cases of Cow-pox inserted in the different journals and magazines were of the spurious kind. In that published by Dr. Hooper in the London Medical Review for July 1799, we are told, the patients had eruptions on different parts of the body; whereas those of the genuine disease are local.

It would be equal injustice to the merits of Mr. Henry Jenner, and to the world, to withhold his testimony on this occasion. His "Address to the Public on the Advantages of Vaccine Inoculation" is adorned with the following motto from Dryden; which is equally spirited and just :

"—————'Tis evidence so full,—
If the last trumpet sounded in my ear,
Undaunted I should meet the saints half-way,
And in the face of Heav'n maintain the fact."

After a manly address, and an earnest appeal, to the candour and good sense of the public, he points out many of the important advantages that will accrue from the introduction of this practice.

He affirms with great truth, that the small-pox calls latent diseases into action, and especially scrofula; whereas the Cow-pox, which proceeds from the healthiest and the most cleanly of all animals, has no disposition to excite any other complaint.

He remarks, that the Cow-pox is not, like the small-pox, infectious in the form of effluvia, and of course not dangerous to surrounding friends; that it may safely be communicated to children who are cutting teeth; and is so far from proving fatal, or occasioning fits or injuring the health during life, as the small-pox frequently has done, that it rather improves the constitution.

He adds the following proofs of its superiority over inoculation with variolous matter. It never disfigures the countenance, nor requires either medicine or a nurse.

The above comparison of the advantages to be derived from the substitution of the vaccine disease for the small-pox, is, as he assures us, founded upon principles, which experience has proved to be fixed upon the solid basis of truth.

After paying a just encomium to his uncle, Dr. Jenner, he observes that prejudice and illiberality will ever be on the watch, to stop the progress of improvement; and to overturn the edifice of well-earned fame.

He doubts whether the weak and futile objection that the vaccine virus is a bestial humour, is not too contemptible to deserve a reply; yet, for the sake of weaker brethren, he refutes it in the most able manner,—proving that those who start such an objection, strain at a gnat and swallow a camel.

In respect to Mr. Jacobs, of Bristol, whose case was first brought forward to public notice by Dr. Sims, as was before mentioned; he brings the most irrefragable proofs that the loathsome disease with which that gentleman was twice afflicted, was no other than the spurious Cow-pox.

He points out inconsistencies in the different accounts of this case which have been published, both in respect to each other, and the general appearance and symptoms of the true disease.

In the account published by Dr. Sims, it is asserted, "that Mr. Jacobs's right arm was in a state of eruption, both the first and second time, from one extremity to the other; but in his answer to Dr. Beddoes's query, he mentions the second infection to have been slight."

In the account published by Dr. John Sims, it is stated, that the pain was excessive; and his fingers so stiff, that he could scarcely move them. In that which was sent to Dr. Beddoes it is stated, that the disease shewed itself, by producing pustules on every finger; consequently including the thumbs, the patient had at least twenty Cow-pock sores; but that he does not recollect their producing any indisposition or fever.—Mr. Jenner appeals to his medical neighbours in the Vale of Gloucester, whether a person who had the tenth part of the number of true Cow-pock sores on such irritable parts as the fingers, would not have felt so much indisposition, that he would have recollected it as long as he lived.

Dr. Sims has since published another letter in the Medical and Physical Journal, in which he acknowledges, with a degree of candour that does him great

honour, "that the experiments already instituted seem fully sufficient to decide, that the Cow-pox matter which has been used for inoculation, is effectual in preserving the patient from any future attack of the small-pox."—He adds, "unless it should be true, as has been suggested, which I deem very improbable, that the Cow-pox enables the constitution to resist the contagion of the small-pox for a certain length of time only. It appears more probable, that there may be different diseases among the cows, which are not very accurately distinguished; and in this point of view, the publication of this and similar cases may have its use, in exciting a due care, that the genuine disease only be taken for the purpose of inoculation."

Mr. Jenner mentions a spurious sort of vaccine disease, which is occasioned by flies of a particular species biting or stinging the teats of the heifer. This, he observes, has no effect in preventing the attack of small-pox.

He tells us, that those who have had the small-pox, may have the Cow-pox; but says, in that case it proves very mild.

Mr. Jenner gives a concise description of the true Cow-pox, and a most unequivocal testimony in favour of its prophylactic virtue, in the following words.—"After a person has had this disease, he will never afterwards be liable to receive the infec-

tion of small-pox, either by contagion or inoculation; and as I have produced a case of the spurious Cow-pox which occurred in Bristol, I shall here introduce one of the genuine kind, which may be referred to in the same city; and will as clearly demonstrate the existence of the same complaint, as Mr. Jacobs's case does that of the other.

“ Mr. John Stinchcombe, broker, St. James's-back, was infected with the Cow-pox, about thirty years ago, by milking at Mr. Coxe's farm, at Stone, near Berkeley. He had one pustule on each thumb, with some degree of soreness and swelling of the glands under the arms; but upon the whole the disease proved milder than the natural Cow-pox generally does. Since that period he had resided many years in Bristol, and has lost four children in the natural small-pox, all of whom he attended and slept with during their illness. He was never inoculated for the small-pox, being fully assured that the Cow-pox had sufficiently shielded his constitution against the influence of that disease.

“ A case also occurs in the town of Berkeley; where nearly sixty years have elapsed since the person had the vaccine disease, but he cannot be infected with the small-pox. The person in question, Mr. John Phillips, is now healthy, and will, if required, readily appear to verify my assertions, and give any person the liberty of infecting him with the small-pox, if he possibly can: but he has already thoroughly

stood the test, both by frequent inoculations, and exposure to the variolous effluvia.

“ Another person, in the parish of Berkeley, who for many years past has been in the habit of nursing small-pox patients, and washing their linen, had the Cow-pox more than thirty years ago; and although I have several times inoculated her, and she has been so frequently exposed to the small pox, yet she has always resisted its infection.”

Mr. Jenner observes, that “ the mind of feeling, anxious for the health and safety of relatives and friends, will pause, and consider, before the small-pox be admitted, while so mild and so efficacious a substitute is offered. The imminent danger,—the disfigured skin,—the subsequent scrofula of the one, will be contrasted with the unmarked countenance, and the perfect safety of the other. But if prejudice should still continue to operate on the general mind, I am confident a time will come, when those who have neglected to take advantage of the present opportunity, will lament their conduct; and possibly lament it with unavailing sorrow.”

Mr. Jenner finishes his able vindication of the new practice, with the following emphatic words.

“ Conscious as I equally am, of the purity of my intentions, and of the truth of my assertions, I leave these remarks with the candid judgment of the public;

to whom I would recommend this concluding observation, that if, by a good-natured stretch of its opinion, the illiberality of my opponents may be overlooked, their ignorance cannot be unnoticed; for I must be bold enough to affirm, that not one case of genuine Cow-pox has ever come under their inspection."

Among other arguments which I have frequently urged, to dissuade medical men from continuing to inoculate with variolous matter, this has been always the most powerful, that by pursuing this practice they continue to spread the natural small-pox, and all the train of evils that attend its career.

*Tristius haud illis monstrum, nec sævior ulla
Pestis et ira deum Stygiis sese extulit undis.*

The havoc that has been committed by the small-pox, is beyond all calculation. It extends beyond the reach of numbers, speech, or thought. Even in its mitigated form, and under inoculation, it is frequently a horrid disease. Even then it does not always lay the grim terrors of its front aside. Even its tender mercies are cruel; and its milder aspect is often, like the Gorgonian shield, enough to strike us with horror.

Yet how many practitioners pretend, that its violence is now totally assuaged by means of art, and its fury reduced within due bounds. Alas! their patients, and the weeping friends of those who are

departed, tell another tale. Happy for them, that silence reigns in the grave ; otherwise what numbers would rise up in judgment against them !

It is not long since I was informed of two children in one house lying dead at the same time,—victims to that disorder, under the form of inoculation. I know two disconsolate parents, who have lost three children,—their only hopes,—by the same disease under the form of inoculation.

Let the public no longer be deluded by artful and designing men ; who are too ignorant to discern improvements, or too proud to acknowledge their errors. Let them beware how they trust a distemper, that never can be so far subdued, as to be divested of danger.

Dî meliora piis erroremque hostibus illum !

I shall follow the example of Dr. Jenner, our great leader, and chief guide, in this undertaking ;—and endeavour most earnestly to impress on the mind of every practitioner, the necessity of being extremely accurate in the choice of vaccine matter. Upon this point our whole success principally depends. Upon this point, therefore, I shall once more expatiate.

It has been before observed, that in the spurious Cow-pox, the pustules are free from the bluish tint ; they are also free from the phagedenic disposition ; and are much less contagious than the genuine species

of the disease. Of these three diagnostics, by which it may be distinguished from the true Cow-pox, the following history, taken from Jenner, will afford a practical illustration.

“ A girl lived at a dairy, consisting of eighteen cows. The nipples and udders of three of the cows were extensively affected with large white blisters. These cows the girl milked daily; and at the same time assisted, with two others, in milking the rest of the herd.

“ It soon appeared, that the disease was communicated to the girl. The rest of the cows escaped the infection; although they were milked by her several days after the three above specified had these eruptions, and even after her hands became sore.

“ The two others who were engaged in milking, although they milked the cows indiscriminately, received no injury. On the fingers of each of the girl's hands, appeared several large white blisters; she supposes about three or four on each finger. The hands and arms inflamed and swelled; but no constitutional indisposition followed. The sores were anointed with some domestic ointment, and got well without ulcerating.

“ As this malady was called the Cow-pox, and recorded as such in the mind of the patient, she became regardless of the small-pox; but on being ex-

posed to it some years afterwards, she was infected, and had a full burden.

“ Now had any one, conversant with the habits of the disease, heard this history, he would have had no hesitation in pronouncing it a case of spurious Cow-pox; considering its deviation, in the *numerous* blisters which appeared on the girl's hands,—their terminating without ulceration,—its not proving more generally contagious at the farm, either among the cattle, or those employed in milking; and considering also, that the patient felt no general indisposition, although there was so great a number of vesicles.

“ This,” Dr. Jenner observes, “ is perhaps the most deceptive form, in which an eruptive disease can be communicated from the cow; and it certainly requires some attention in discriminating it. The most perfect criterion by which the judgment can be guided, is probably, that adopted by those who attend infected cattle.—These white blisters on the nipples, they say, never eat into the fleshy parts, like those of a bluish cast, which constitute the true Cow-pox; but affect the skin only, quickly end in scabs, and are not nearly so infectious.”

One cause of spurious eruptions Dr. Jenner had remarked in his former treatise to be, the transition which the cow makes, in the spring, from a poor to a nutritious diet. Hence the udder becomes more vascular than usual, for the supply of milk. But

there is another source of inflammation and pustules, which, he believes, is not uncommon, in all the dairy counties. This is, neglecting to milk the cows, and suffering their udders and nipples to be immoderately distended, when they are to be exposed for sale. The consequences of this accumulation of milk are, inflammation and eruptions which mature.

Another cause of a spurious disease in the human subject, which might be mistaken for the genuine, is a decomposition of the true vaccine virus. This also Dr. Jenner considers of very great importance; and wishes it to be strongly impressed on the minds of all, who may be disposed to conclude hastily on his observations.

In his first treatise he had mentioned an instance, where a gentleman used to carry about him variolous matter; received on lint or cotton, and put into a vial while in a fluid state. The warmth of his pocket produced putrefaction. Hence, although inflammation, swellings of the axillary glands, fever, and sometimes eruptions, were excited, yet the unfortunate patients were as subject to the small-pox as before; and many, who thought themselves in perfect security, fell victims to that horrible disease.

This history, Dr. Jenner remarks, may be considered as a corroboration of the facts so clearly detailed by Mr. Kite, in the fourth volume of the *Memoirs of the Medical Society of London*.

For the sake of such persons as cannot have access to those memoirs, I shall give a succinct account of Mr. Kite's animadversions on this subject.

Three children whom he inoculated, had a proper inflammation on their arms; two had a few eruptions, and one had a considerable number. A short time after, they all caught the disease in the natural way. The reason why the matter with which they were inoculated, proved insufficient to render them insusceptible of the small-pox, was, as Mr. Kite with a great degree of probability supposes, that it was not taken till the fifteenth day after the eruption.

The woman who had laboured under the disease, appeared to be perfectly recovered; and the pustule from which it was taken, was the only one that remained. Hence the before-mentioned anomalous complaint, arising from a feebleness and impotency of the infecting matter; which rendered it incapable of propagating the perfect disease: and on this account Mr. Kite exhorts medical practitioners, never to employ variolous matter but when fresh. This caution is equally necessary to be observed, in inoculating for the Cow-pox.

In addition to this evidence, proving that matter, when it has suffered a certain degree of decomposition, may still produce local and general symptoms, in some measure resembling the true disease, Dr. Jenner produces the testimony of Mr. Earle, surgeon, of Frampton-upon-Severn.

This gentleman, being unable to procure any other matter, took some from a pustule which was far advanced. Of five persons inoculated with this matter, four afterwards caught the small-pox in the natural way; one of whom died, three recovered; and the other, being cautioned by Mr. Earle to avoid as much as possible the chance of catching it, escaped from the disease through life.

In these cases, the inflammation and suppuration of the arm were as considerable, or more so, than common; and in one there was an ulcer, which cast off several large sloughs. Eruptions appeared about the ninth day; which died away earlier than usual, without maturation.

Let those, whom prejudice has so far blinded against the Cow-pox, that they can see none of its advantages over the small-pox, because the practice may not prove infallible, reflect on these events; and not condemn a practice which has preserved thousands of lives, because it might be found to fail in a single instance.

One case, where the small-pox occurred a second time, I lately shewed to Dr. Jenner and Mr. Simpson. It was brought to me by my friend Mr. Leighton. To those who know that gentleman, his own opinion is sufficient; but if any other can be deemed necessary, it was the opinion of all who saw the case, that it was undoubtedly the small-pox.

The number of pustules amounted to some hundreds. Yet the patient had been inoculated by Mr. Leighton, three years before; and had a proper inflammation and pustule on the arm, together with a small eruption.

Had an ulcer, which cast off large sloughs, appeared in the course of vaccine inoculation, such as Mr. Earle describes to have taken place in inoculation for the small-pox, we should have heard an alarm from artful and designing men, as loud as if a blazing comet appeared; or as if an enemy were landed, and on full march towards the metropolis.—Yet this is what happened, in the small-pox every day.

Mr. Earle inoculated three children, with matter procured by another person. The arms inflamed properly; fever and pain in the axilla came on; and in ten days, eruptions appeared, which disappeared in the course of two days.

Being somewhat alarmed for the safety of these patients, from the similarity of the cases to those already mentioned, he inoculated them a second time, with matter in its most perfect state; in consequence of which, they all took the infection of the small-pox again; and all had a very full burden.

Dr. Jenner supposes, and is justified in that supposition both by reason and analogy, that variolous matter is capable of undergoing a variety of interme-

diate changes, between that state in which it is capable of producing its full and decisive effects, and that, wherein its specific properties are entirely lost. He subjoins the following singular occurrences, in ten cases of inoculation, communicated to him by Mr. Trye, surgeon to the Gloucester infirmary; which seem to indicate, that the matter, previously to its being taken from the pustule, had suffered a partial decomposition.

Mr. Trye inoculated ten children, with matter taken at one time, and from the same subject. He observed no peculiarity in any of them, before they were inoculated; nor did any thing remarkable appear in their arms, till after the decline of the disease. At that period, two infants of three months old had erysipelas about the incisions; in one of them extending from the shoulders to the fingers' end. Another had abscesses in the cellular substance, in the neighbourhood of the incisions; and five or six of the rest, had abscesses in the axillæ.

The matter was taken from the distinct small-pox, late in its progress; and when exsiccation of some of the pustules had taken place. It was received upon glass; and slowly dried by the fire. All the children had pustules which matured.

These instances, it may be hoped, will be sufficient to deter practitioners from using matter for inoculation, when the disease is in too advanced a state.

To prevent the virus from suffering putrefaction after it is taken from the pustule, Dr. Jenner advises that it should be dried in the open air, on some compact body, such as a quill, or a bit of glass; and that it should be kept in a small vial. Thus prepared, he observes, it was found perfectly active, and possessing all its specific properties, at the end of three months.

Another approved method of preserving it, is, to receive it on cotton thread; for common thread as I have experienced in matter I received from Dr. Jenner, and as he informs me, others of his correspondents have experienced, scarcely absorbs a sufficient quantity of matter to secure infection. This thread, when impregnated with matter, is to be slowly dried, then rolled up in writing paper, as closely as possible; and if it is necessary to keep it long, the ends of the paper may be covered with sealing-wax.

In this manner Dr. Marshall packed up some matter I supplied him with, when in town, which was going to Gottingen. Other parcels he varnished over with a solution of sealing-wax in spirits of wine, by the advice of the Rev. Mr. Jenner. These parcels he was going to carry with him to Naples. The sealing-wax, being rasped with a knife, easily dissolves in the spirit, if suffered to stand a day or two; the vial being now and then shaken.

Another cause, why the vaccine virus may some-

times prove imperfect, and occasion an imperfect disease, is, as Dr. Jenner believes with great reason, the following. Matter received from a pustule when it has degenerated into an ulcer, may have partly lost its specific qualities; yet, when applied to a sore, in the casual way, it may dispose that sore to ulcerate, produce irritation of the system, and imitate the genuine distemper.

The disease thus induced, although some of the symptoms may be more severe than usual, might not be effectual in obviating the future events of various contagion. This appears highly probable from analogy. In some of the cases of small-pox related by Mr. Kite, and Mr. Earle, the inflammation and suppuration of the inoculated arms were unusually severe; yet the constitutions of the patients did not undergo the specific change which is necessary, in order to render it insusceptible of the small-pox.

Having fully discussed these points, Dr. Jenner vindicates himself from the charge of credulity, with respect to the primary source of the vaccine disease. Among other arguments which he recapitulates, are the following. The Cow-pox has never appeared in the dairies in his neighbourhood, but it could be traced, either to the introduction of an infected servant, an infected cow, or a horse affected in the manner described, which had been dressed by one of the milkers.

In the next place, morbid matter generated by the horse, is capable of communicating a disease in the human subject; which is scarcely distinguishable from the Cow-pox.

Dr. Jenner adverts to the progress and general appearance of the pustule on the arm of the boy, whom he inoculated with matter taken from the hand of a man infected by a horse; and the similarity of the constitutional symptoms to those of the Cow-pox.

He remarks, that this case, on which he laid no inconsiderable stress in his former treatise, as presumptive evidence of the truth of his opinion, seems to be either mistaken, or overlooked, by those who have commented upon the subject; and refers to case xviii, page 33.

Dr. Jenner informs us, that from the similarity of symptoms, the common people when infected with this disease, frequently call it the Cow-pox. This is a fertile source of error; and, where the cows in a farm labour under a disease at the same time, is likely to beget an erroneous idea of security from variolous contagion.

After many ingenious and valuable remarks, for which I must refer my readers to the work itself, Dr. Jenner concludes his observations with letters received from several respectable practitioners, containing at-

testations in favour of his assertion, that the Cow-pox protects the human body from the small-pox.

Mr. Darke, surgeon, of Stroud in Gloucestershire, inoculated a number of persons three times, and kept them in the same room with others labouring under the disease; yet none of them received infection. On enquiry he found, they all had had the Cow-pox.

Mr. Fry, surgeon, of Dursley in the same county, has inoculated about forty persons who had previously gone through the Cow-pox; and although the variolous matter was inserted four, five, and sometimes six times, yet they all resisted its action. These persons also associated with others labouring under the disease; and some of them were exposed to the contagion of the natural small-pox, but to no purpose. The same testimony is given by Mr. Tierney, of the south Gloucester militia.

The most satisfactory evidence, both in regard to the mildness of the Cow-pox, and its antivariolous power, is also laid before the public by Dr. Jenner in a letter from Mr. Cline.

To say that no authority can be more respectable, is to say what is already known to all the world: but if any other sanction were wanting, we have that of Dr. Lister, formerly physician to the Small-pox hospital, who attended with Mr. Cline; and was convinced that the Cow-pox produced insusceptibility of the small-pox.

The energetic conclusion of Mr. Cline's letter, which is equally favourable to the practice recommended by Dr. Jenner, and honourable to Dr. Jenner himself, deserves to be recorded. It is as follows:

“ I think the substituting the Cow-pox poison for the small-pox, promises to be one of the greatest improvements that has ever been made in medicine; and the more I think on the subject, the more I am impressed with its importance.”

In the third part of this work, entitled a Continuation of Facts and Observations, &c. Dr. Jenner tells us, that since his former publications on the Cow-pox, he had had the satisfaction of seeing it extend very widely. The subject had been pursued with ardour, not only in this country, but in different parts of the continent, where it had afforded perfect satisfaction. He had also the pleasure of seeing the feeble efforts of a few individuals to depreciate the new practice, sinking fast into contempt, beneath the immense mass of evidence which had risen up to support it.

Upwards of six thousand persons had then been inoculated with the virus of Cow-pox, and the far greater part of them had afterwards been inoculated with that of small-pox, and exposed to its infection in every rational way that could be devised, without effect.

Dr. Jenner adverts to the patients inoculated with the Cow-pox by Dr. Woodville at the Small-pox Hospital; three-fifths of whom had eruptions resembling the small-pox, while those inoculated by himself and other medical gentlemen in his neighbourhood were totally exempt from any such appearance. This Dr. Jenner accounts for, from a great number of patients in the Small-pox Hospital having been inoculated with variolous matter also, before the vaccine virus could have had time to render the habit insensible of its operation.

Certain it is, the matter became adulterated, and produced a disease totally different from the genuine Cow-pox. Hence the seeds of a spurious distemper were disseminated far and wide.

*Hoc fonte derivata clades,
In patriam populumque fluxit.*

The Cow-pox, Dr. Jenner observes, has been known in our dairies time immemorial. "If," says he, "pustules like the variolous were to follow the communication of it from the cow to the milker, would not such a fact have been known and recorded at our farms? Yet neither our farmers, nor the medical people of the neighbourhood, have noticed such an occurrence."

He admits that sometimes, though very rarely, a few scattered pimples appear, some of which remain long enough to suppurate at their apex; and remarks

that a local cuticular inflammation, whether spontaneous, or arising from acrid substances externally applied, may produce this effect, even in distant parts, in irritable constitutions. If any proof be necessary to confirm this assertion of Dr. Jenner, the following may be deemed sufficient.

A lady sent for me on account of a very considerable rash, which affected the whole body. While I was endeavouring to ascertain the cause of this phenomenon; I observed a small plaster on her wrist; and was informed that it was a plaster of Mercury and Gum Ammoniac, which was applied to a small encysted tumor. I enquired whether the eruption first appeared in the neighbourhood of the plaster; and was answered in the affirmative.

The only instance of a pustulous eruption worth mentioning, that has occurred in my practice, since I have used Dr. Jenner's matter, was in the child of this lady. The inflammation surrounding the primary pustule, perhaps partly from the habit of the patient, and partly from some accidental cause, ran high; and pustules, exactly resembling the variolous, but rather small, ensued. It is not improbable, however, that they might proceed from previous infection of the small-pox.

Dr. Jenner calls the attention of his readers, to the change which took place in the general appearance of

the disease, during the progress of vaccine inoculation, at the Small-pox Hospital.

This was not sudden, but gradual. In the first five hundred, pustules were produced in three cases out of five; in the next hundred, about one in five; in the next, about one in eight; in the next, about one in fourteen, &c. Thus the extraordinary number of pustules which appeared at that place, gradually receded.—That fell monster, the small-pox, as if conscious of the superiority of its opponent, retreated; but retreated—*acer acerba tuens*,—and seemed to quit its den with reluctance.

The physician of the Small-pox Hospital has been applauded by some, and censured by others, for introducing the practice of Cow-pock inoculation into that place. It has been said, that he had no right to apply the hospital to any other purpose, but that for which it was destined by the governors. In respect to this charge, I humbly presume to think, his conduct not only justifiable, but deserving of the warmest approbation. The hospital was intended for the cure of the small-pox; but prevention is better than cure; and his design was to make a fair trial of what was recommended, on the most respectable authority, as a prevention.

How far it was prudent to try the prophylactic process in the place where the disease existed, may

be questioned. For my own part, I think with Dr. Denman, that the Small-pox Hospital was the most unfit place in the kingdom, for the experiment. Surely it was rash, to bring those whom you wish to preserve from contagion, to the very centre of contagion; and to inoculate for Cow pox in the Small-pox Hospital, till that Augæan stable was first cleansed.

As success in this practice depends principally on the choice of matter, I shall enlarge on that point; this is the more necessary, since, after all the warnings that have been given, mistakes are daily committed, by using variolous instead of vaccine matter. Fortunately, however, even those mistakes, although they lessen in some degree the benefits of the Cow-pox, produce no worse a disease, than that under which the human species before laboured.

Having conceived an early prepossession in favour of vaccine inoculation, and anxiously sought for an opportunity of putting it in practice, I was much surprised, and discouraged, by the result of the two first cases; where considerable eruptions, resembling the small-pox, appeared; attended with the other characteristics of that disease. It is well known, that matter can seldom be procured from the cow; and we are in general under the necessity, of inoculating with that which has been taken from the human subject.

While the practice was yet in its infancy, and to

me entirely new, it was impossible for me to determine, whether the matter which I had received was partly variolous, or whether the disease was degenerating into the small-pox. Seeing other cases, which assumed a much better aspect, I made a fresh trial, and was more successful.

After a little time, I was perfectly convinced of the value and importance of the discovery; and prosecuted my experiments with new ardour. Thus intent on trying the full efficacy of a practice, which promised such a considerable alleviation to the miseries of mankind, I could not read, without some degree of surprise and indignation, a number of severe and unjust reflections on that practice, and on its author.

Impressed with these sentiments, I published a letter in the Medical and Physical Journal for August, 1799; on which I cannot but set some value, since it has been the means of introducing me to the acquaintance of Dr. Jenner.

That letter, together with one which I received from him in consequence, will tend to elucidate certain points of no small moment in the question under consideration; and give me an opportunity of apologizing for errors, which time and experience have enabled me to correct. I shall therefore insert them in this place.

To the Editors of the Medical and Physical Journal.

GENTLEMEN,

THE introduction of the Cow-pox into practice, as a substitute for the small-pox, at present engages a considerable share of the attention of medical men. Permit me, therefore, to insert in your very valuable publication, a few remarks on that disease.

Great praise is due to Dr. Jenner, for this improvement; and while I join in paying a just tribute of applause to his merit, I sincerely hope, that the preventive he proposes will prove successful, and at length exterminate one of the most dreadful scourges of the human race.

Of those whom I have inoculated, or seen inoculated, with vaccine matter, few have had any considerable eruption, and those few were inoculated with matter, which there is reason to believe was not taken from the original pustule on the arm; a circumstance which Dr. Woodville has proved to be of great consequence in this disease.—The rest scarcely appeared to labour under the least indisposition, except what arose from the inflammation of the arm; and even that was not worse than in cases of inoculation with variolous matter.

I have seen, at the Medical Society, a letter which was received by Dr. Jenner from a surgeon in the country, giving an account of his having inoculated above a hundred persons, with vaccine matter sent him by Dr. Jenner; and that only two or three had any pustules, which were few, and confined to the arm.

That eruptions, in this disease, are not peculiar to the metropolis, as Dr. Jenner supposes, other instances prove, besides those recorded by Dr. Woodville. The only two patients inoculated by me, who had many pustules, resided at Kensington till after the eruption had taken place; and the only one besides, whom I have seen, at Highbury-place. A physician of Bath informed me, that he had inoculated two, both of whom had eruptions; and it is a little remarkable, that the matter of all the patients above mentioned came from a practitioner, who was in the habit of taking it from the secondary pustules; a circumstance which I have carefully avoided.

The success of the practice has, on the whole, been such as to gratify every reasonable expectation; especially if allowance be made for the error of taking the matter from an improper pustule; an error easy to be avoided in future. Had all the patients inoculated with vaccine matter at the Small-pox Hospital, by Dr. Woodville, been in the house, and under his immediate care, it is probable his first

report would have been still more favourable: but even from that, I should not hesitate to prefer the vaccine to the variolous disease.

In the short time which has elapsed since I began to write these remarks, I have heard of two families, plunged in the deepest affliction by the inoculated small-pox; while, on the other hand, only one solitary instance is on record, of the Cow-pox proving fatal; and we have reason to believe, from Dr. Woodville's subsequent report, that even that unfortunate event would not have happened, if the disease had then been as well understood as it is at present. Be that as it may, I hope no practitioner will in future inoculate with any vaccine matter but what is taken from the original pustule, unless he thinks proper to inoculate himself. I deem it also a duty, in this age of experiment, to caution medical men not wantonly to expose the lives of their fellow creatures to any unnecessary danger; and not to inoculate with one kind of matter, till another has produced its final effect.

That two morbid actions cannot take place in the body at the same time, may pass uncontradicted in the schools, but not in the field of experience. One case of a complication of the small-pox and the measles, was read before the Medical Society; and others I could prove by the most respectable testimony.

Dr. Moseley, in his treatise on Sugar, lately published, expresses a suspicion, that the Cow-pox can only render the habit insusceptible of the small-pox "*for a time.*"—This is refuted by volumes of evidence, and a cloud of witnesses.—He says, "Inoculation has disarmed the small-pox of its terrors."—This is refuted by the whole world.

He asserts, "that accidents in the inoculated small-pox are uncommon." Would to God experience did not disprove that assertion, and convince practitioners in general, that no care, no skill, ever did, or ever can, tame that dreadful hydra—the small-pox!

He tells us, "We all know, from experience, that disease, properly treated, leaves nothing after it injurious to the constitution."—That we do not all know it, is certain: if Dr. Moseley has been so happy as to discover the secret, I hope his humanity will prompt him to disclose it.

It is well known, that the small-pox, whether natural or insidious, is one of the most common causes of scrofula; and my experience leads me to believe, that the absurd custom of giving cathartics after this and other eruptive disorders, by debilitating the habit, augments their tendency to produce that horrid disease.

Dr. Moseley tells us, "he wishes not to discourage inquiry," and admits, that "the object well deserves

it;" yet, with some degree of inconsistence, he adds, that he wishes "to guard parents against suffering their children becoming *victims to experiment*."—My wishes are not less ardent than his:—he wishes to prevent children from becoming victims to *experiment*; I wish to prevent them from becoming *victims to the small-pox*.

Dr. Moseley intended his eccentric remarks, which are introduced rather mal-a-propos in a Treatise on Sugar, as an antidote for what he calls the *Cow-mania*.—He himself seems to labour under the *Cow-phobia*.—He asks, if any person can say, "what may be the consequences of introducing a *bestial humour* into the human frame, after a long lapse of years?"—I beg leave to ask, in my turn, if any person can say, what may be the consequences, after a long lapse of years, of introducing into the human frame, *cows' milk, beef-steaks, or a mutton-chop?*

I hope medical men will in future be cautious, how they prejudice the public mind against a fair trial of a practice, warranted by observation, and recommended by a physician of distinguished abilities; and not spread a serious alarm, where even the vulgar and illiterate, who are generally most averse to all innovations, and of course to all improvement in the practice of physic, have not hitherto hinted a suspicion.

Dr. Moseley argues, as if the Cow-pox were a new

disease in the human species; a supposition which it is unnecessary to refute. One of the advantages proposed by Dr. Jenner and Dr. Pearson, from the establishment of the new practice, is, that although the disorder in question is so common, and has long been well known in many parts of the kingdom, *it never has been suspected to leave behind it any other disease.*

I am happy in being able to add my testimony to that of Drs. Jenner, Pearson, and Woodville, in confirmation of the efficacy of the new practice; having inoculated with variolous matter, twelve persons whom I had previously inoculated for Cow-pox, all of whom escaped the infection of the small-pox.

Since most of the foregoing observations were written, I have seen Dr. Woodville's second report, confirming the opinion he expressed in the first; and acknowledging that he has lately been much more successful in his practice; in consequence of refraining from taking matter from patients who had the disease severely;—a caution I have always observed.

It has been asserted, that the Cow-pox cannot be communicated but by contact; and, in the most positive manner, that it certainly cannot be communicated by means of effluvia, where there is no pustule but that of the arm. In this respect, I think, gentlemen have been rather too hasty in forming their

conclusions, when the disorder has been so short a time under their immediate care and inspection. I have seen one instance, where the disease was communicated without a possibility of its being received by contact; and where the child, from whom the infection came, had no pustule but that on the arm; and from good authority I have heard of another instance, where the infection was caught from one who had a considerable eruption.

Dr. Jenner, having found some difficulty in communicating the infection of Cow-pox, proposes a method which I think rather tedious and troublesome. I beg leave therefore to suggest, that if, instead of puncturing or scratching the skin in the ordinary way, the lancet, after liquifying the matter, if necessary, by steam, is laid almost flat upon the skin, and then inserted obliquely, so as to raise the cuticle, moving the point backwards and forwards a few times, to separate the matter from the lancet, and wiping it on the puncture,—the matter will in general be received and retained by the cuticle, as by a valve.

Here followed some observations on the treatment of the arm. At that time apprehensions were entertained, that the local affection was more severe than in the small-pox. When I published on the subject, I recommended the methods which proved most successful in similar cases, in the latter disease: but by much experience I am convinced, that nothing is to

be feared in that respect, provided any person, who is acquainted with the first elements of surgery, has the care of the patient.

Matter taken from a secondary pustule in the cases of the Rev. Mr. Holt, and in those of Dr. Marshall of Eastington, produced as mild a disease, as that taken from the original pustule on the arm; but in those related by Dr. Woodville, it produced a more severe disease. This difference may be accounted for, by supposing that in one case it was pure, and in the other polluted; or that the patients under the care of the two former gentlemen were kept at a distance from the small-pox, and those under the care of the latter exposed in some shape or other, to its contagions.

That a disease excited by matter, which was contaminated with small-pox, should often be attended with pustules, and sometimes prove infectious in a gaseous form, will not appear surprising; but that it was the Cow-pox, cannot for a moment be supposed, by those who are conversant in vaccine inoculation, and well acquainted with the true genius of the disease. To corroborate this assertion, I shall lay before my readers the letter I received from Dr. Jenner on that subject.

“ Cheltenham, Aug. 16th, 1799.

“ Dear Sir,

The very candid and satisfactory manner in

which you have delivered your sentiments on the Variolæ Vaccinæ, cannot but be gratifying to the public in general, and to my feelings in particular. I write this to express my thanks to you. At the same time, allow me to make a few observations on the origin of the pustules, which have appeared under vaccine inoculation; as this occurrence seems to have led you into an erroneous inference.

“ You observe, that eruptions have appeared among those who have been inoculated in the country, as well as in the metropolis; and also that the infection has been communicated by effluvia even from the inoculated pustule. Let me call your attention to the source of the infection you allude to. It was that which was generated at the Small-pox Hospital.

“ From the time I first heard, that pustules similar to the variolous, had appeared among the patients inoculated there with the vaccine virus, I strongly suspected, from a coincidence of circumstances, that by some imperceptible avenue the variolous virus might have crept into the constitution at the same time. Subsequent occurrences tend strongly to confirm this supposition.

“ My last publication (Further Observations, &c.), was sent out before I could so fully decide on this important point, as I can at present. Conceiving the London cows to be more out of a state of nature than the animal fed in the country meadows, I could

not say positively whether the virus generated by one or the other might not in some measure differ, and therefore was unwilling to decide, until this had been ascertained by experiment. Sometime in April, the Cow-pox appeared at one of the great milk farms in the neighbourhood of town. With this virus, several patients in the country were immediately inoculated. The result was just the same as in my former experiments; that is, it produced the true Cow-pock pustule on the part where it was inserted, but no secondary pustules; nor has a single pustule appeared in any one instance, wherein the matter was taken from this source for the purpose of inoculation, and the cases now amount to more than seventy.

“ From variolated pustules, one cannot be surprised to hear, that a disease has been communicated by effluvia. By no means that I could devise, have I been able to infect a person by the effluvia of the simple Cow-pock pustule; although I have tried several. Among others, I have suffered children, two or three times a day, to inhale by the mouth and nostrils the effluvia of pustules on the arms of others; when the matter has been in its most active state, and the pustules punctured in several places to give the matter the fullest effect. There is another strong fact, that strengthens the supposition of the matters being contaminated at the Small-pox Hospital. The variolous appearance among the patients is more and more retiring. Out of the last 110 cases, Dr. Woodville remarks, only seven had pustules.

The Cow-pox then, maintains its ground; having nearly destroyed the co-operating effects of the small-pox. And this event gives strength to what I have from the commencement of my experiments imagined, that the latter is a malignant variety of the former, the parental root being the Cow-pox.

It is a little vexatious to find, that so many should take up the subject, and give their decisions to the public, without understanding it in the least; but, after the castigation that one of these gentlemen has experienced from your hands, I hope they will in future be more cautious.

I remain, &c.

EDW: JENNER.

To those who have diligently read the various publications that have appeared on this important subject, the insertion of this and the preceding letter may seem unnecessary. It is with regret I inform those persons, that a considerable part of the public, and even of professional men, are still ignorant of the nature, and real merits of this practice.

The lukewarmness and indifference with which this improvement of the science has been regarded by a number of medical men, is truly astonishing. Had Jenner's book held out a prospect of gain, by describing a new disease, instead of proposing a prophylactic that was to cut off a lucrative branch of

trade,—it is probable it would have been purchased and read with greater avidity.

Such persons as have not seen the works of Jenner, who have not examined what has been written in favour of vaccine inoculation, have amused themselves with a newspaper or a magazine, and poisoned their minds with the falsehoods there inserted,—falsehoods known to be such by their own authors,—falsehoods, which may be considered as the last dying words and confession of the small-pox.

Some of the unfavourable reports raised against this practice, are palpable forgeries. The name of the person, perhaps, is mentioned; but not the residence. No signature is affixed; or only such as would injure the best cause.

The prejudices entertained by many are not calculated to give the highest opinion of the enlightened state of the human understanding, at the close of the eighteenth century.—I have repeatedly been asked, whether, as the cow is a short-lived animal, those who are inoculated from the cow will not be short-lived also?

Those who asked this simple question did not consider, that the cow is not suffered to live half her days. They did not consider, that while she is suffered to live, no animal is so healthy.—If, however, the philosophers of the present day should dis-

cover this to be an erroneous opinion, and that the cow carries about her the seeds of mortality, I hope no person will in future be so rash, as to sit down to a dinner of roast beef and plumb pudding, or venture on custards or ice-cream, without asking his physician, surgeon, and apothecary, to be of the party.

Other prejudices against the vaccine inoculation, which have come to my knowledge, only deserve to be mentioned on account of their absurdity. A lady complained to Mr. Simpson, that since her daughter was inoculated, she *coughs like a cow*, and is *grown hairy all over her body*; and Mr. Blair was told, on a late excursion into the country, that the inoculation of the Cow-pox was discontinued there, because those who had been inoculated in that manner, *belowed like bulls*.

So difficult has it been found to reconcile the minds of the vulgar and the ignorant to this innovation, that some practitioners have inoculated with vaccine matter, under pretence of inoculating for the small-pox. One of these gentlemen, when questioned by a mother, whether he had not inoculated her children with the Cow-pox, confessed the fact, and told her, that in a few days they would give milk.

I before observed, that variolous matter was frequently inserted into the system, either by carelessness, by accident, or by mistake. This, every can-

did person must acknowledge, is no reasonable objection to the new practice, since, even in that case, no disease is introduced, but that which prevailed before; and which the new practice is intended to supersede.

The unexpected appearance of pustules, for a while considerably damped the ardour of those, who at first conceived a favourable idea of vaccine inoculation; and has since afforded a pretence to its enemies, for opposing its progress. The variety of incongruous, and even contradictory opinions that have been published on the subject, lie scattered, like the leaves of the sibyl; and, instead of clearing up the mysterious point, rather seems to leave "confusion worse confounded."

One thing, I trust, I shall be able to prove, which is, that those very cases, which at first seemed to cast a shade on the new practice, when placed in a proper light, evidently reflect on it the greatest lustre.

In the Medical and Physical Journal for February, 1800, Dr. Pearson observed, that, "although the new inoculation is sufficiently extensive, to manifest the advantage of it over that of the small-pox, so that it is not likely to be ever laid aside; yet the unexpected appearance of eruptions has inclined many persons to be of opinion, that no beneficial consequences can be produced by the practice."

Dr. Pearson informs us, that, in the course of his experience, he had met with some cases, attended with eruptions so much resembling those of the small-pox, that he should not have hesitated to consider them as belonging to this disease, if he had not excited them by a different poison. Finding, in several instances, that the matter from the inoculated pustule of these patients produced a similar eruptive disorder, and the same being the event in the practice of two or three of his correspondents, whom he had furnished with matter from the above eruptive cases, he from that time avoided using matter from the cases in which such eruptions appeared. After this precaution, no eruptive cases resembling the small-pox, but eruptions from a single one to about a dozen, which were large, red, hard pimples, with little or no lymph, and never with any pus, occurred in about one case out of twenty or thirty. These spots so unlike the small-pox, gave no trouble, and were of a short duration.

On the first occurrence of eruptive cases, Dr Pearson says, it was obvious to suspect, that variolous matter had been introduced into the constitution, instead of the vaccine poison; but the same thing having happened in the practice of others, he thought it unreasonable to doubt any longer, that, either on account of peculiar states of the human animal economy, or some co-operating agents, the genuine vaccine poison occasionally produces a certain variety of the Cow-pock, characterised by the appearance of pustules like those of the variola.

To confirm the truth of this hypothesis, he gives a detail of cases, in which the disease, according to his opinion, assumed this pustulous form; which is as follows.

“ In the month of October last, I inoculated a child two years of age, with the vaccine poison. The original matter, which had produced this matter, I took from the cow in March last; since which time the vaccine disease had been excited by it, in my hands, in a great number of patients.

“ The vaccine disease took place with the usual appearances in the inoculated part, and affected the whole constitution in the ordinary manner; but a few eruptions broke out on the second or third day, after a slight fever; they were, however, only the red large pimples aforementioned, and of course not at all like the small-pox. Mr. Keate carried matter from this child to Brighthelmstone, where Mr. Barrett inoculated two children, who took the disease; and from one of these Mr. Keate inoculated three children. They all had the usual fever about the eighth day, and all had a number of eruptions, except one, who had only five or six, and those dried on the fifth day. This last case was probably that, which, Mr. Keate informed me, had in the inoculated part the genuine vaccine pustule; but in all the others, Mr. Barrett observed, that in the inoculated part, the pustule was ragged at the edges, and flat, most resembling the variolous pustule. Matter from

these patients was sent to Petworth; where, Mr. André informs me, he inoculated with it fourteen children. They all took the disease, and had eruptions like the variolous. Three children at the breast had from three to twelve pustules; the remaining eleven children had from fifty to several hundred eruptions. The state of the arms, and the characters of the pustules of the inoculated part, are not mentioned. None of the above patients died; nor is any mention made by Mr. Keate, Mr. Barrett, or Mr. André, even of any apprehension of danger. I add, that about a month ago, Dr. Thornton sent the case with eruptions, produced by matter which I originally took from the cow."

According then to experience, we draw these conclusions:

1st. That in certain constitutions, or under the circumstances of certain co-operating agents, the vaccine poison produces a disease resembling the small-pox; and, of course, the pustule in the inoculated part is very different from that of the vaccine pock ordinarily occurring, and the eruptions resemble very much, if not exactly, some varieties of the small-pox.

2nd. That in some instances these eruptions have occurred, although the inoculated part exhibited the genuine vaccine pustule."

3rd. That the matter of such eruptive cases, whether taken from the inoculated part, or from other parts, produces universally, or at least generally, similar eruptive cases; and has not, I believe, been seen to go back, by passing through different constitutions, to the state in which it produces what is called the genuine vaccine disease.

“ 4th. That eruptions of a different appearance from variolous ones, sometimes occur in the true Cow-pock.”

Dr. Pearson expresses his doubts, whether, by any kind of decomposition, and new combination, the vaccine poison might in some cases be changed into variolous matter; and gives his opinion, that the value of the new practice is hereby depreciated, but not to such a degree as to create any reasonable apprehension of the failure of the vaccine inoculation, in superseding, and finally extinguishing the small-pox.

He concludes with observing, that, “ unless some new adverse facts shall be discovered, and confiding that the public will adopt a method which is manifestly to their interest, the change effected in medical practice *will be so eminently memorable, that the introduction of the vaccine inoculation must become an epoch in the history of physic.*”

I admit the truth of this observation, and most

cordially join in the just encomium paid to the new practice. How must our estimation of the value of that practice be enhanced, if it can be proved by substantial evidence, that what was supposed to be the Cow-pox in a malignant state, was in reality no other than our inveterate enemy the small-pox,—whose hydra-heads are no sooner cut off in one part, than they threaten to shoot up in another! *Dabit Deus his quoque finem.*

In reply to Dr. Pearson, some animadversions appeared in the same journal from Dr. Jenner.—He affirms, that from the commencement of his inoculation with the vaccine virus to that day, no pustules, similar to the variolous, had in any one instance appeared; and that he very much suspected, where *variolous pustules* appeared, *variolous matter* occasioned them.

In the London Medical Review appeared another reply to Dr. Pearson, from the Rev. Mr. Fosbrooke; who also maintains, that pustules resembling those of the small-pox had never been seen in his neighbourhood, in the vaccine practice, although above a thousand persons had been inoculated in that manner. He therefore thinks it more reasonable to suppose, that variolous contamination had taken place, than an exception peculiar to the practice of Drs. Pearson and Woodville, and those whom they had furnished with matter.

To put this question out of all doubt, I shall here insert a letter from the Rev. Mr. Ferryman to Dr. Jenner; which represents the Cow-pock in a favourable point of view, and exhibits a striking contrast between that innocent disease and the small-pox.

" Petworth, June 14, 1800.

" DEAR SIR,

" NOTHING could be more unfortunate than the introduction of the Cow-pox at Petworth; nothing more happy than the conclusion of the business.

" The first matter, which, at my request, you were so obliging as to send to Lord Egremont, did not succeed in communicating the disease. A few weeks after, some other matter was sent from Brighton; the stock of which came from Dr. Pearson, of Leicester Square, London.

" Fourteen patients were inoculated with this matter. It excited such a fever, and such a number of eruptions, that I did not hesitate to say decidedly, the disease was not the Cow-pox, but the small-pox.

" In consequence of this, Lord Egremont most humanely had all the patients immediately removed to his own house; to prevent, if possible, this dreadful disorder from spreading.

" During this, one Mary Shepherd, an elderly

woman of the parish of Byworth, was in the habit of coming daily to his Lordship's house for medicines; and in the course of these visits, she sometimes saw, and passed near to, the persons who had the small-pox, and was in the room where they had occasionally been; and at length was seized with the disorder, and died. Her husband caught the infection of her; but, after much suffering, recovered.

“ Mr. André conducted the whole inoculation with great care and judgment. It is necessary to have it known, that the small-pox had not been in Byworth, or in the neighbourhood of Byworth, for many months before this period; that this woman was old and infirm; that she had not, for years, travelled further than his Lordship's house; and, that she believed she caught the disorder there.

“ Mr. Whicher, a gentleman the first in medical knowledge in Petworth, her still surviving husband, her relations, and all her neighbours, openly and unequivocally declare the same opinion; which, altogether, makes such a body of evidence, as almost amounts to a positive proof, where and how she caught the infection; and since, as fully appears from a number of subsequent cases at Petworth, the Cow-pox is in no shape infectious, there rests not the shadow of a doubt upon my mind, but that the disorder, which, with such headlong incautious zeal had been first disseminated around Brighton and Petworth, was no other than the very same small-pox, which for

so many ages has made such a dreadful ravage among the human species.

“ So soon as this unlucky business was got rid of, some Cow-pox matter arrived from you ; but among the affrighted inhabitants, it was with difficulty that Lord Egremont could find any one willing to be inoculated. At last, however, his Lordship succeeded ; the matter took effect ; and in the course of a few months, *between four and five hundred were inoculated, without a single case of pustules, of danger, of difficulty, or of alarm.*

“ These plain facts, I doubt not but the whole of the inhabitants of Petworth and its vicinity, would, if it were needful, join in attesting, with,

“ Yours most respectfully,

“ R. FERRYMAN.”

This is a faithful picture of the mild genius of the Cow-pox, drawn by the hand of an able master. It is here sufficiently distinguishable from the small-pox ; which serves for a shade, and sets it off to the greatest advantage.

Dr. Pearson himself published, in the Medical and Physical Journal for May, 1800, some account of this affair, with the laudable intention of undeceiving the public, lest the credit of the new practice should suffer undeservedly.

A report, we are told, had been propagated in some circles of high rank, that two persons had died at Petworth, under the inoculated Cow-pox, with matter which Dr. Pearson had sent from London. This statement, however, we are informed by Dr. Pearson, is incorrect. The matter employed at Petworth had been taken from some persons at Brighton, having an eruption resembling the small-pox. These had been inoculated from others labouring under a similar disease; who had been inoculated with matter taken, not by Dr. Pearson himself, but by another gentleman, from one of Dr. Pearson's patients, who had the distinctly marked Cow-pock, without such eruptions.

In order to prevent any possible doubt from remaining, even in the most weak and timorous mind, in consequence of the Petworth business, I shall copy Mr. André's letter to Dr. Pearson on that subject.

“ SIR,

“ THE matter sent from Brighton to Petworth, produced a disease in every shape resembling the small-pox: the time of sickening, the symptoms, the eruptions and their maturation were the same. The number inoculated was fourteen. Three of these were children at the breast; the number of eruptions in them was from three to twelve. The ages of the remaining eleven were from three to fourteen, and the numbers of the eruptions from fifty to a thousand. I shall be very glad to give you

any further information in my power, should you have any more questions to propose.

“ I remain,

“ Your obedient humble servant,

“ *Petworth,*

Dec. 11, 1799.

“ W. ANDRÉ.”

Dr. Jenner is by no means inclined to imagine, that the eruptions in the cases described by Dr. Woodville, were produced by pure uncontaminated Cow-pock virus. He ascribes them to variolous infection; which, he thinks, happened from the inoculation of a great number of the patients with variolous matter, some on the third, others on the fifth day, after the vaccine virus had been inserted.

It should be observed, says Dr. Jenner, that the matter thus propagated became the source of future inoculations, in the hands of many practitioners, who were not acquainted with the nature of the Cow-pox.

In January, 1799, Dr. Woodville inoculated seven persons with matter from the cow. Of these, three had no pustules; one had four, another five, another twenty-four, and another a hundred and seventy.

Two persons were inoculated from two of those who had no eruption. These persons complained of head-ach, and pains about the loins. One of them had about thirty pustules, the other had six; and all

of them, Dr. Woodville says, were *apparently variolous*.

In the third case related by Dr. Woodville we are told by that gentleman, the arm produced appearances more analogous to those of the inoculated small-pox. Two pustules, *exactly resembling those of the small-pox*, appeared near the inoculated part; and *the cutaneous inflammation had that peculiar irritable or angry aspect, which is observable on the accession of the eruptive symptoms, in cases of inoculation with variolous matter*. Suppuration took place on the arm; and twenty-four pustules made their appearance.

In the fifth case, the insertion of vaccine matter not seeming to have caused any inflammation or hardness in the part, the patient was inoculated with variolous matter, at the distance of two inches from the first. Next day, a little redness could be discovered at the first puncture. After a few days, both proceeded with an equal pace; they were of the same form, and as they approached to suppuration, were attended with an equal degree of efflorescence. On the thirteenth day, there appeared more tension and pain at the variolous tumour; but the other was more prominent. In this case there were *four pustules*.

In the eighteenth and nineteenth cases, the patients were inoculated with matter taken from the subject

of the last case, which Dr. Woodville calls Cow-pox matter; and at the same time with variolous matter; but the effects of the latter inoculations were prevented on the following day, by applying vitriolic acid to the punctures. One of these patients had *four pustules*.

The other was inoculated in the other arm, with matter taken from the subject of the third case. *Six pustules* appeared. This and the preceding patient *were constantly exposed to the small-pox, during the progress of their inoculation.*

In the fourth case, *five pustules* appeared on the *fifteenth day*. This boy, Dr. Woodville says, was *twice inoculated with variolous matter, during the progress of the Cow-pox infection, and exposed to patients under the small-pox the whole time, without being infected by it.*

In the sixth case, the vesication had taken place on the fifth day; attended with inflammation. The patient was now inoculated with variolous matter. On the fourth day from the insertion of this matter, the puncture began to be elevated and inflamed. On the next day, the patient complained of head-ach, and pain about the loins; and the tumour produced by the Cow-pox matter was more inflamed at the margin, and *beset with minute confluent pustules*. Pustules appeared from the thirteenth to the seventeenth day, which dried at the usual time. Their

number is stated in one place to be from one to two hundred, in another to be one hundred and seventy, *in no respect differing from variolous pustules of the mild sort.*

The patient who was the subject of the eighth case, was inoculated with the matter of Cow-pox, taken from the arm of a woman who caught the disease by milking cows. This patient also was inoculated with variolous matter on the fifth day. On the seventh day from the insertion of this matter, the pustule which it occasioned, was *surrounded with an irregular margin.* On the ninth day, it was *beset with confluent pustules at its edge.* On the fourteenth, it was *in a purulent state.* This patient had about *three hundred pustules*, which at this time were *very large, and all in a state of maturation.* The eruption began on *the ninth day.*

In the ninth case, the patient was inoculated on the fifth day with variolous matter. On the fifth day from its insertion, the edges of the tumour were *studded with small pustules.* This patient had *three pustules*, one of which *matured.*

The tenth patient also was inoculated with variolous matter on the fifth day. At this time, the vaccine pustule was *considerably elevated* and inflamed. On the ninth day, it was *much advanced: the pellicle was filled with ichor.* On the sixth day from the insertion of variolous matter, the tumour it produced

was spreading a little; and in a state of vesication. On the ninth, it was “efflorescent; but not to half the extent of the other. From this time the tumours quickly healed; no eruption took place; and no farther inconvenience was experienced.”

The favourable termination of this case, is no argument of the prudence of such a hazardous experiment, as that of trying whether the Cow-pock in its early stages can resist the variolous contagion.—The infant Hercules, it is true, strangled the serpents; but he was not much indebted to the person who exposed him to severe a conflict.

In the eleventh and twelfth cases, the patients were inoculated first with variolous, and on the next day with vaccine matter. The Cow-pock tumours advanced equally with the variolous, and bore a strong resemblance to them. The former, however, were more elevated and circumscribed: for about the ninth day, the variolous tumours became angulated, or ragged, at the margin; which was not so conspicuous in the others, *though both had small confluent pustules at their margins. Those of the Cow-pox also sooner healed; and formed a smoother scab.* One of these patients had about a hundred pustules, the other more than three hundred; *all of which, we are told, were in every respect similar to variolous pustules;* and well they might be, considering the stock from which they sprung.

In this, and several of the preceding cases, we see the true criteria of small-pox; and only wonder how they found a place in "Reports of a Series of Inoculations for the Cow-pox." Had it been intended, to cast a gloom over the fair prospect of vaccine inoculation held out by Jenner, and to nip the practice in the bud, it would have been difficult to devise a more effectual method of accomplishing that end.

The thirteenth and fourteenth cases also afford proofs of the co-existence of the two diseases; but the pustules were not numerous.

Upon taking a retrospect of the sixth case, it will be seen, that in that instance a person was inoculated with Cow-pock virus, and every thing went on well, till that busy and officious intruder, the small-pox, interfered, and resolved to have a share in the prey. From that time, clouds overcast the medical horizon; and the splendour of the new practice was eclipsed. Even the vaccine pustule itself was besieged by confluent variolous pustules. Can it be supposed then, that the vaccine virus could remain unpolluted, and the small-pox not mingle its baneful stream?

With matter derived from this tainted source, the patient who constitutes the fifteenth case was inoculated. He had pain in the head and loins for two days; and fifteen pustules.

The sixteenth patient was inoculated with what

Dr. Woodville calls COW-POX matter, taken from the same person. In this case, head-ach and pain in the loins continued several days, and were succeeded by vertigo. Pustules began to appear on the fifteenth day; and continued to increase till the eighteenth. Hence it is probable, that the variolous eruption was in this instance suspended by the action of the vaccine matter with which the variolous matter seems to have been blended; for we are told, that the *central* pellicle of the tumours was replete with a watery humour. On the twentieth day, the face was swelled; the pustules were very sore, and in a purulent state. They amounted in number to *five hundred and thirty*. As a proof of the co-existence of Cow-pox with small-pox, the scabs, at the inoculated parts, were of that brown smooth kind peculiar to the Cow-pox.

In the seventeenth case, the patient, who was inoculated with the same sort of matter, escaped eruption; but laboured under head-ach and pain of the loins two days. In the preceding case, the patient was ill six days; and the patient from whom the matter for these two was taken, was ill four days. How different from the Cow-pox, where, in general, not one in ten has any material indisposition!

That the twenty-second case, besides many others, was variolous, an illness of six days, tumours studded with vesicles, and two hundred and twenty pustules, all of which arrived at a state of suppuration, will strongly attest.

Dr. Woodville observes, and observes very justly, that those who are acquainted with the history of the Cow-pox will no doubt be surprised to find, from the preceding and other cases, that pustules have frequently been the consequence of the inoculation of this disease. Their surprise, however, will be of but short duration, when they consider, that the small-pox was for ever to accompany it, like its evil genius; an associate, that might well prove its bane!

We are informed by Dr. Woodville, that among the patients inoculated for the Cow-pox, during the first week in which he obtained the matter of this disease, "*several were so circumstanced, as to be afterwards constantly exposed to the infection of the small-pox.*" He says, "Having then had no proof, that the progress of the infection of the former would *supersede* that of the latter, I used the precaution to inoculate the patients with variolous matter, on the fifth day after that taken from the cow had been inserted."

I have known a number of instances, where the progress of vaccine infection has not superseded that of the small-pox.

In the first instance, the patient had been exposed to a variolous atmosphere a week; in the second, only a day, before the insertion of vaccine virus. In each of them a proper pustule was excited; in the first, with little or no surrounding inflammation;

in the second, with every characteristic of the Cow-pock.—In each of these cases, the patient sickened for the small-pox about a fortnight after the insertion of the vaccine virus.

Hence it is evident, that the Cow-pock pustule, however perfect it may be, and however regularly it may pass through all its stages, is not, as has been supposed, a certain security against the small-pox; unless we except from that rule those who are previously infected.

Hence also it is evident, how rash it is to expose any person to variolous infection, till he has completely gone through the vaccine disease. Cases may occur, where it may be unavoidable; but this will not justify any one for introducing into a place where the small-pox prevails, those who have not previously been rendered insusceptible of injury from such exposure, by the prophylactic property of the Cow-pox.

Much light has already been thrown on the subject: but it will appear probable from the foregoing cases, that we have yet something to learn, respecting this singular distemper. If it is a certain protection against the small-pox, which I trust it is, that must be understood of the distemper, when it has run through its whole course, in a person not yet exposed to variolous contagion.

Some of Dr. Woodville's patients were constantly exposed to the small-pox, during the progress of inoculation; and the consequence was what might reasonably be expected; they had the small-pox.

That an infant at the breast, inoculated at the time of dentition, should fall a victim to a disease occasioned by such matter, cannot excite the least degree of surprise. Dr. Woodville says, he is inclined to think, that if the matter of the Cow-pox, used for the purpose of inoculation, were only taken from those in whom the disease appeared in a very mild form, the result would be more favourable than in the statement he has there given. For though it has occasionally happened, that the matter taken from the arm of a patient, in whom the disorder neither produced fever nor eruption, has in others produced both; yet still it has much more commonly had the effect of exciting a milder disease than the matter of the pustules, or than that which was obtained from a patient who had the disease in a severe manner, as may be seen by an examination of his table.

By that table it appears, that the patient, from whom the child was inoculated, whose case afforded a fatal proof of the propriety of this observation, was ill three days, and had 300 pustules.

To remove every shadow of doubt, that this patient had the genuine small-pox, or at least, had not the genuine Cow-pox, I shall state the result of other inoculations from the same matter. Of 13 cases set

down in the table together, one had three days illness and 12 pustules, another four days illness and 15 pustules, another four days illness and 17 pustules, another four days illness and 30 pustules, another four days illness and 60 pustules, another three days illness and 75 pustules, another two days illness and 100 pustules, another three days illness and 150 pustules, another two days illness and 200 pustules, another four days illness and 430 pustules, another three days illness and 500 pustules, another four days illness and 650 pustules, and another had four days illness and 700 pustules.

Talbot, the patient who afforded this matter so fruitful of pustules, was inoculated from a pustule of Timms. Timms had seven days illness and 165 pustules. Two others, besides Talbot, who were inoculated from Timms, had three days illness and 500 pustules. Timms was inoculated from Webb, who had 12 pustules. Webb was inoculated from Reed, who had five days illness and 70 pustules. Reed was inoculated from Jewel, who had two days illness; Jewel from Butcher, who had the same; and Butcher from Collingridge, the subject of the sixth case, who had four days illness and 170 pustules.

Of 509 patients, whose cases are recorded in the tabular statements annexed to his report by Dr. Woodville, 207 were exempt from pustules; a circumstance of itself sufficient, to shew the benign character of the Cow-pox in comparison of the small-pox; in which a case without eruptions is so rare

an occurrence, that a physician from the country lately mentioned it at the Lyceum Medicum Londinense, as an extraordinary phenomenon, having once met with it in his practice.

Most inoculators have met with it many times. I believe, however, that in this, the most unfavourable report of vaccine inoculation, in spite of a variolous atmosphere, and perhaps, in some cases, a variolous inoculation, it occurred at least twenty times as often as it had usually done in the inoculation of the small-pox.

Of 302 who had eruptions, 90 had 100 pustules, or more. Twelve of them had 100, one had 102, two had 105, two had 120, one had 140, six had 150, one had 156, one had 165, two had 170, one had 174, seventeen had 200, one had 220, three had 250, ten had 300, three had 350, two had 400, one had 430, one had 450, eleven had 500, one had 530, three had 600, two had 650, two had 700, and two had 1000.

Dr. Woodville acquaints his readers, that the matter employed in the Cow-pock inoculation, was always taken before the constitution could well be affected by the variolous matter: but as the practice was novel, I cannot see how that could well be ascertained. In the vaccine inoculation, the constitution is frequently affected with drowsiness, the most common symptom of the disease, as early as the *fourth* day

and I have sometimes known it so affected on the *third* day. This shews how cautious we ought to be, in setting bounds to the power of morbid matter, or determining how early the constitution may not be affected, and the same specific matter generated, by its influence on the system.

The matter was taken, we are told, during the time that both inoculations were merely local diseases. The variolous matter was not inserted till the fifth day; before which time the vaccine distemper often exhibits evident signs of constitutional affection. In the mean time danger is to be apprehended from the variolous atmosphere which the patient has been breathing, and which may have superadded the small-pox to the Cow-pox, or created a hybrid disease.

To those who are inclined to indulge in speculation, this affection, with all its concomitants, affords an ample field. That two eruptive disorders can exist in the human body, I shall endeavour to prove by the most respectable authorities. Whether a disease that can be properly called hybrid can exist, and if it can, what transmutations that disease can undergo, must at present remain undecided: *non nostrum tantas componere lites.*

That two morbid actions in the same body, at the same time, are not incompatible, is an opinion which I advanced in the Medieal and Physical Journal for August, 1799, when expostulating against the mad

rage of experiment which had gone forth ; and which I have already inserted in this treatise. That opinion was by modern theorists considered as downright heresy ; but it is founded in truth, and will ultimately prevail.

In addition to the proof adduced before in support of this theory, two instances of the co-existence of small-pox and measles are to be found in the Medical and Physical Journal for June, 1800. These cases are taken from the New York Medical Repository ; and are published by Dr. Tracy.

In a short preamble Dr. Tracy informs us, that although he was sensible the weight of medical opinion militated against him, yet the conclusive evidence which facts afforded, removed all doubt from his mind, and led him to submit the cases to the candour of the faculty.

In the first the small-pox appeared on the tenth day of inoculation ; and the measles on the eleventh, in its usual manner ; *neither interrupting the inflammation of the arm, or the eruption of pustules.*—The second case differs in nothing essential from the first.

Mr. Leighton informs me, that he met with three cases of a co-existence of small-pox, measles, and hooping-cough, in the family of Mr. Dennison, at that time living in Dorset-street, Manchester-square.

In the Medical Journal for July, 1800, are two cases of the co-existence of small-pox and measles, by Dr. Russell, and two by Mr. Leese of East-street.

I have met with three cases of the co-existence of Cow-pox and measles within the last six months. The first was in the child of Mr. Shepherd, in Phoenix-yard, Oxford-street. The second was the child of ——— Hardey, No. 45, Peter-street, Westminster. This case I shewed to Dr. Jenner and his friend Dr. Marshall of Gloucestershire. It was also seen by Mr. Messiter. The third case was in the child of ——— Groom, World's-end-passage, Newington-causeway.

Mr. G. Jenner lately met with a similar case.—In these different instances, the periods of the respective eruptions were various. In the first that occurred to me, the measles appeared on the second day, and went through their regular course; yet in no degree retarded the progress of the vaccine pustule. In the second instance the measles appeared on the eighth day; and in the third instance on the fourth day; yet neither distemper interrupted the other. In the case which occurred to Mr. G. Jenner, the measles appeared the eight day, without checking the progress of the pustule. In those cases which I have seen, the areola surrounding the pustule was perfect. This was also remarked by Dr. Jenner, in the case which I shewed him. Dr. Marshall assured me, that no-

thing but ocular demonstration of such a case, could have convinced him of the possibility of its existence.

A case of co-existence of the Cow-pox and the chicken-pox, which occurred to Mr. Little of Plymouth, is published by Mr. Dunning in his *Observations on Vaccination*. In that case the chicken-pox appeared on the tenth day of vaccine inoculation. The vaccine pustule was at that time arrived at its height of inflammation, and maintained its specific character.

Hence it appears evident, that greater caution is necessary in the practice of vaccine inoculation, than has hitherto been observed. The doctrine of the incompatibility of two morbid actions in the same body, at the same time, sanctioned as it is by the high authority of Mr. Hunter, has been a fruitful source of error.

The decline of pustules at the Small-pox Hospital is attributed by Dr. Jenner to the Cow-pox virus, assimilating the variolous. To me it seems to be owing to the decline of the variolous infection, occasioned by the introduction of the Cow-pox. Dr. Jenner speaks of the total extinction of pustules, as already accomplished. This is a consummation devoutly to be wished; but unfortunately, it is not yet accomplished.

By a subsequent account, published by Dr. Wood-

ville, we are informed, that in the Small-pox Hospital, pustules still appear. To solve this difficulty, and at the same time preserve inviolate Mr. Hunter's opinion, Dr. Jenner supposes the small pox and the Cow-pox to be the same diseases under different modifications; and informs us, that Dr. Woodville concurs in this opinion.

He also limits the axiom of Mr. Hunter to the incompatibility of two diseased actions in one and *the same part*. Mr. Hunter's axiom however was more general, in whatever manner it may have been expressed on any particular occasion. The prevailing hypothesis, that two cutaneous diseases cannot make their appearance at the same time, but that one will always suspend the other, is continually quoted in the medical schools and societies, as maintained by Mr. Hunter; and Mr. Home himself lately informed me, that Mr. Hunter was of opinion, two cutaneous diseases could not take place at the same time, in the same person.

By a reference to the cases of co-existence before enumerated, it will be found, that in some of them, not only the patients laboured under two eruptive diseases at the same time; but that the eruption was even synchronous.

That one or the other disease is frequently, and perhaps generally suspended, I shall readily admit; but this is not sufficient to justify the exposure of patients under vaccine inoculation to variolous infec-

tion. This practice can only be palliated by the prevalent opinion, that two such diseases cannot possibly co-exist.

But what proof have we, that even the limited axiom of Mr. Hunter, is founded on the basis of truth? Why are two morbid actions more incompatible than two healthy actions? That two, or more, healthy actions in the stomach, may co-exist, will not, I apprehend, be denied. When the peristaltic motion takes place, by muscular action, surely no one will maintain, that the action of the nervous or arterial system must necessarily be suspended.

It is an arduous task, and perhaps too arduous for our finite capacities, to fix the boundaries of physiology, and to say to nature, Hitherto shalt thou go, and no further.—If on a subject so abstruse, we may be allowed to reason by analogy, why may not two morbid actions, as well as two morbid eruptions, take place in the same part of the same body, at the same time?

The various operations, and combinations, that take place in the animal, vegetable, and mineral kingdoms, while they justly deserve, and naturally excite inquiry, should impose caution. Nature is coy; and will not suffer herself to be unveiled all at once. Philosophy must woo her with modest approach, and with patience. She is not to be taken by assault.

Dr. Jenner says, the decline, and finally, the total extinction of the pustules, are, in his opinion, to be attributed to the Cow-pock virus assimilating the variolous. I, who am but a humble disciple of Dr. Jenner, may well be excused for being less an enthusiast in the cause. We are told, the lean kine swallowed the fat kine, and the rods of Aaron swallowed the rods of the magicians; but the age of miracles is now past, unless we except the miracle of preventing the small-pox.

Several months have elapsed since Dr. Jenner announced, or at least anticipated, the extinction of pustules. It is probable the latter was all that he intended. The decline of them was so rapid, according to the former report of Dr. Woodville, that, according to the old adage, *facile credimus quod volumus*, Dr. Jenner might well believe that their total extinction was near at hand.

At present, however, that flattering hope is vanished; for it appears by the report of the practice in the hospital, lately published by Dr. Woodville, that the heads of the hydra still germinate, and that the twice-vanquished Phrygians live, and renew the contest.

The face of things is certainly much changed, since thirteen or fourteen who were inoculated in that hospital from the pustules of one patient, all had pustules; so well the sons resembled the sire; but every

friend of humanity must ardently wish, to hear of the total extirpation of every vestige of small-pox, in that emporium of vaccine matter.—How should the stream flow pure, when the fountain is polluted?

Dr. Woodville, speaking of the double inoculation, says, if a person had been inoculated with matter taken from the Cow-pox tumour on the arm of Jane Collingridge, after both inoculations were supposed to have affected the constitution for several days, neither facts nor analogy lead us to believe, that the matter thus obtained would produce any other matter than that of its own species; or that its specific morbid quality would be changed, by entering into combination with the virus of the small-pox.

With respect to mixed inoculations of all sorts, we may say emphatically, in the words of Hippocrates, *Judicium difficile, experimentum periculosum*. It may be remarked, however, that in Jane Collingridge's case, the tumour produced by Cow-pock matter, was on the eleventh day beset with minute confluent pustules; which, every one knows, is a characteristic of the small-pox. It may therefore reasonably be supposed, that some of the same matter as was contained in the circumambient pustules, might either be secreted in that situated in the centre; or become blended with its contents by the accidental rupture of one of the pustules; or by the very act of taking the matter, whether on a thread or lancet.

In the eleventh and twelfth cases related by Dr. Woodville, the patients were inoculated with variolous matter one day, and with Cow-pox matter the next. In both cases, the vaccine tumours bore a strong resemblance to the variolous. About the ninth day, the variolous tumours became angulated, or ragged, at the margin. The vaccine tumours were likewise angulated, or ragged, at the margin, though not in an equal degree; and both of them had small confluent pustules at their margins. The three hundred pustules which were the fruit of this unhappy union, were, as might well be supposed, in every respect similar to variolous pustules.

From the observations of Mr. Kelson, of Seven-oaks, published in the Medical and Physical Journal for July, 1800, it appears, that the vaccine virus may be intermixed with the variolous, without being chymically combined with it. Hence two sorts of eruptions were produced; one of pink, fiery-looking blisters, the other of pustules. Those who were inoculated from the former, had the Cow-pox; those who were inoculated from the latter, had the small-pox.

In one of Mr. Kelson's first cases, the vaccine disease appeared in the mildest form possible. The matter taken from this patient, Mr. Kelson soon learnt to prefer. From this no eruptions occurred, in upwards of a hundred patients, whom he inoculated, from two weeks old to eighty years. In the

autumn, he received a fresh supply of matter from Dr. Pearson; with which he inoculated as many more, without having one eruptive case.

Mr. Kelson is of opinion, that the vaccine disease, when unattended with eruptions similar to variolous, *is a thousand times more trifling than the small-pox*; he scarcely had a patient sufficiently ill to prevent amusement or labour. He says, the local inflammation is not to be dreaded; only requiring a singed rag, when the pustule happens to be rubbed off;—and that it is not an infectious disease.

To determine this last point, he selected about forty people in the workhouse, and inoculated half of them, some in both arms, and fixed them to sleep with those who had not had the disorder; but in no instance was it communicated to the others. He broke the pustules, and frequently made them smell the parts; but to no effect.

After giving the disease to the remainder, the following experiments were made, in order to ascertain whether it was a security against the small-pox. First, he inoculated the whole party with the most virulent matter he could procure; but nothing ensued, except local superficial inflammation for the first six or seven days.—He then introduced a wretched family, just recovered from a very bad small-pox, their dirty clothes unchanged, and divided these in different beds among them; but to no purpose.

He then inoculated with Cow-pox an infant, and as soon as he was satisfied that infection had taken place, had it put into the bed with its sister, who had the most dreadful confluent small-pox; but no inconvenience ensued.

The greater part of these patients Mr. Kelson has since inoculated again, both with vaccine and variolous matter; but without effect. Most of the others whom he inoculated, have had variolous matter inserted afterwards, for the satisfaction of themselves or friends.

Mr. Kelson informs us, that all the local pustules he ever saw, in these eruptive cases, contained a fluid of a different consistence and appearance from the true vaccine lymph; approaching very nearly to pus. He supposes that in drawing a thread through this mixed local pustule, one part of the thread may have particles of variolous, the other of vaccine virus, adhering to it; and thus accounts for the dissimilarity of the eruptions produced.

He never knew an instance of its occasioning scrofula, or any cutaneous disease; and has never given a single dose of physic, either before or after inoculation.

He tells us, that Cow-pock matter, received on thread, and kept only a few days, loses its specific property; and is incapable of producing the genuine

vaccine disease. In this respect, his opinion is erroneous; but the appearances which induced him to form that opinion, should be sufficient to warn every gentleman against using stale matter, when it is possible to procure that which is fresh. Knowing how unapt dry matter is to take effect, I am rather inclined to think, that the slight local symptoms were occasioned by the simple wound, perhaps aided by friction of clothes, or any other cause, than by putrid matter; which seldom fails to produce more serious consequences, than any which Mr. Kelson has described.

I hope also, that those who pursue the practice of vaccine inoculation, will in future be deterred, by information Mr. Kelson has given, from compound inoculations of all sorts; otherwise it will appear evident to all the world, that they have the gratification of an idle curiosity at heart, not the good of the patient, nor the honour of the profession.

As a proof that matter obtained from a pustule excited by vaccine virus, would not produce any other disease than that of its own species, Dr. Woodville asserts, that "the general character of the tumour formed by the inoculation of the small-pox, is very different from that of the Cow-pox; and though; on the same day, a person be inoculated in one arm with the matter of Cow-pox, and in the other with the matter of small-pox, yet both the tumours preserve their respective characteristic appearances, throughout the whole course of the disease."

This ill accords with the zone of confluent pustules, which Dr. Woodville describes in more than one instance, or with the angulated and ragged margin, which seems to have been occasioned by an irruption of those varioliform, and probably variolous pustules: nor does it agree with the observations of Mr. Kelson.

The sketches of the Cow pox drawn by Dr. Woodville, are inconsistent with the true character of the genuine distemper. If a solitary instance of pustules now and then occurs, it may be either a *lusus naturæ*, or a previous infection of the small-pox; but when a conflux of pustules surrounds the tumour, and when the margin of the tumour is angulated and ragged, we may say, without much offence to medical gravity and decorum,

“ With all these tokens of a knave compleat,

“ Shouldst thou be honest, thou’rt a dev’lish cheat.”

A strong argument, that no chymical combination takes place, when the patient has the vaccine or vacciniiform pustule, complicated with variolous or varioliform pustules, may be deduced from hence; that both in the practice of Dr. Woodville, and in that of Mr. Kelson, the two different diseases, although they were forced to co-exist for a while, betrayed a disposition to separate, like the rays of light in a prism. For this, and many other reasons, however one may prove a succedaneum for the other, and however their nature may appear to some practitioners to ap-

proximate, to me it appears to be far as the poles asunder.

Dr. Woodville inoculated, in one day, twenty-eight patients with vaccine and variolous matter, mixed together in equal quantities. In more than half of these cases, the local affection distinctly assumed the characters of the Cow-pox; in the others it rather resembled the small-pox; but in none of them was there much indisposition, or many pustules.

We are told by Dr. Woodville, that matter taken from the arm of a patient who had 310 pustules, all of which suppurated, was sent by him to Dr. Jenner; who, after a fair trial of it, informed him, that it produced all the effects of genuine vaccine matter. Others have not been equally fortunate.

Dr. Woodville remarks, that the vaccine disease affords a striking example, and perhaps the only one yet discovered, of a disorder which can be transferred from brute animals to man, and carried back again from him to the brute. This was proved by inoculating a cow belonging to Mr. Coleman with vaccine matter taken from the human subject. Similar attempts, made with variolous matter, had no effect. In this respect there is no analogy between the two diseases.

In another respect also, the two diseases differ.

The small-pox, as far as authentic records go, has never been excited either by casual infection, or by inoculation, in a person who has had the Cow-pox; unless the patient was exposed to the variolous infection, before the vaccine disease was fully terminated.

As the habit is rendered insusceptible of the small-pox by the Cow-pox, so it is in general rendered insusceptible of the Cow-pox by the small-pox. To this rule there are exceptions. But as the Cow-pox is not contagious in the form of effluvia, and few persons have reason to fear it in consequence of its introduction into medical practice, it appears to me to be of but little moment; I have therefore made but few experiments, to determine this point.

Three persons whom I inoculated with vaccine matter after they had the small pox, shewed no signs of infection; in a fourth, my nephew, Mr. J. Ring, a vaccine pustule was excited in each arm, but without any constitutional affection. With the matter thus produced, Mr. Thompson, of Rochester, inoculated a man who had not had the small-pox, and produced the perfect disease.

This, we know, has been done, in those who have had the small-pox, with variolous matter also. But instances of the perfect vaccine disease, after the small-pox, though rare, are to be found in the tracts published on the subject. More than one occurs in the writings of Jenner and Woodville; and two have

been communicated to me by Mr. Rankin of Eastbourne.

Having heard that Captain Mowatt was going to have his child inoculated for the small pox, and had taken a house at some distance from Eastbourne, for that purpose, to prevent the communication of the disease to his neighbours,—I sent him an account of the superiority of the new practice, and prevailed on him to adopt it.

Being informed that the servant who had the care of the child had inoculated herself from the child in both arms, and had the disease, I was willing to ascertain the particulars, and requested the favour of Mr. Rankin to communicate them. From him I received the most satisfactory proofs, both of the existence of the disease, with all its attendant symptoms, in this instance; and in another, where a lady who also had had the small pox, was inoculated in jest by her husband with matter taken from one of her children, on the point of a needle.

In both cases there was considerable inflammation of the arm, together with pain in the axillæ; which, in the former case, was also considerable, and was accompanied with headach and fever. This person had been inoculated for the small-pox by Mr. Rankin himself, seven years before; and had manifested every sign of the disease, both local and general.

Dr. Woodville justly observes, that in every case with which we are acquainted, the Cow-pox has been introduced into the human constitution through the medium of external local inflammation; and is therefore to be considered as an inoculated disease.

He adds, the virus of it seems also to affect a similar mode of action; and to be governed by the same laws as that of the small-pox. It must, however, be recollected, that much of the virus which he inserted, was that of the small-pox.

Mr. Jordan, surgeon, of Bermondsey-street, sent three lancets to the Small-pox Hospital for Cow-pock matter, and what was his surprise, when in all the three cases, the small-pox was produced! one of these my friend Mr. Simpson shewed me with his permission. -Mr. Jordan has since assured me, that he is certain the lancets, when sent to the hospital, were clean; and as to the taking of the matter, it is not reasonable to suppose that office is negligently performed, when it produces so considerable a revenue.

Although Dr. Woodville is not convinced that the matter at the hospital is contaminated by the small-pox, I more than suspect it to be so, from the number of instances in which the small-pox has been excited by matter procured from that quarter.

Among others, one was communicated to me, by

a gentleman who applied to me for matter for Dr. Rollo. Not thinking myself justifiable in giving Dr. Rollo's authority for the truth of the fact, without his consent, I wrote to him, and received the following answer.

“Woolwich, 17th July, 1800.

SIR,

The information given by Dr. ——— was correct, though not so clearly related, as might appear to you entirely satisfactory. The circumstances were these, Dr. Irwin of the Royal Artillery, having been requested to inoculate an officer's child with the vaccine matter, he was anxious to obtain it from the purest source. Dr. Woodville kindly offered to supply him with it, and received for the purpose from Dr. Irwin a new lancet, which had never been used on any occasion before; this lancet was returned by Dr. Woodville, and the child was inoculated with it. Being the first case of inoculation with supposed vaccine matter here, I watched the progress in the arm with Dr. Irwin. When the pustule was formed, it was so like that of the small-pox, that I expressed some apprehension, and looked for Dr. Jenner's marks of discrimination. But all doubt was removed, when the inflammation surrounding the pustule was distinguished by the eruption in small-pox, was accompanied with fever, and in the usual time attended by a general and very numerous eruption of common small-pox; the whole forming a disease of great danger;—the child, however, happily recovered.

The lancet you were so kind to send me by Dr. —, was made use of; but the infection was not communicated; indeed the child had been inoculated with small-pox matter ten days before, without effect, which seemed to denote the want of the necessary predisposition at the time, to either infection. Should you have any of the real vaccine matter to spare, I shall be much obliged to you for some more of it. In obtaining it, the greatest caution should certainly be observed, as the case I have described points out; for had that case been less attentively watched, it might have passed as the vaccine disease, and of course, must have been stated against it; whereas, as it now stands, it appears to me, from the well authenticated accounts of the mild degree of the inoculated vaccine disease, when contrasted with that of the inoculated small-pox, so far as this view of the disease extends, to be highly in favour of the former.

If this answer to your letter of yesterday appears to you in the smallest degree useful as a caution, I can have no objection to your mentioning it, in any way, to serve that purpose.

I have the pleasure to be, Sir,
with respect,

Your obedient Servant,

J. ROLLO."

Dr. Woodville has again brought the subject of the purity of the vaccine matter used by him, before

the public. A subject of greater magnitude, was never brought before that awful tribunal.

Having been informed, both in private conversation with medical men, and in medical societies, that Dr. Woodville now ascribes the pustulous eruptions which had appeared in vaccine inoculations at the Small-pox Hospital, to the variolated atmosphere which the patients breathed, I concluded he was convinced, that the matter in the pustule on the arm was variolated also. This I had reason to conclude, since it is well known, that variolous pustules have been so frequently produced by matter, which has emanated from the Small-pox Hospital as vaccine matter, as not to be fairly attributable to mistakes, or chance; and it cannot be by design, for it is not to the interest of those who take the matter, to bring it into discredit.

I am just informed, that one of Mr. Jordan's patients, infected from that source, has such a load of small-pox, that he is literally covered with matter. The other two have had their share. However, hopes are entertained that they will all recover. Thus, while we are striving to exterminate that disease, the small-pox has again begun its ravages in three fresh parts of the populous Borough of Southwark. *Bel-lua multorum est capitum*. It is in vain we hope to quell this dreadful hydra, if, while we cut off one head, three spring up. If all our strenuous exertions are to be thus frustrated, and the Small-pox Hospital

is only calculated to preserve its own pestilence, rather let it be razed from its foundation.

Of the rectitude of Dr. Woodville's intention, I harbour no doubt. Of his learning and ingenuity, no man has a higher opinion than myself. Nevertheless, I cannot help thinking, that he labours under an error of judgment on this occasion. I sincerely hope, however, that our inoculators have not carried variolous, instead of vaccine matter, to France; otherwise Bonaparte may be tempted to exclaim,

Quicquid id est, timeo Danaos et dona ferentes.

After mentioning that the vaccine pustule on the arm is commonly circular, while that occasioned by variolous matter is angulated and irregular, and disfigured by numerous vesicles, as happened to the vaccine pustules themselves, in the Small-pox Hospital, when the patients were also inoculated with the small-pox, Dr. Woodville remarks, that a still more general and decisive distinction is to be drawn from the contents of the Cow-pock tumour. The fluid seldom becomes purulent; and the scab which succeeds is of a harder texture, exhibits a smoother surface, and differs in its colour from that which is formed by the concretion of pus.

But, he tells us, the appearances here described do not constantly attend the disease. They are sometimes so changed, according to Dr. Woodville's opinion, that they can in no respect be distinguished.

from those which arise from the inoculation of the small-pox. He also informs us, what will readily be believed, that when the disease thus deviates from its usual appearance *at the inoculated part*, its effects upon the constitution are commonly more severely felt. This, if I divine aright the cause of such a deviation, is no more than to say, that the small-pox is a more severe disease than the Cow-pox.

After observing, that if he was to state a number of cases of variolous inoculation reduced to tables, like those which he has given of the Cow-pox, a comparative estimate of the two diseases might be formed with tolerable precision, Dr. Woodville gives his decided opinion, that matter of the Cow-pox has generally produced much fewer pustules, and less indisposition, than that of the small-pox ; and this conclusion appears just ; since two-fifths of the patients, even under the malign influence of a variolous atmosphere, and in some cases a variolous inoculation, escaped without pustules, and three-fourths of them without any perceptible disorder of the constitution.

Dr. Woodville acknowledges that matter taken from the arm of a patient who had secondary pustules, or from the secondary pustules themselves, was more apt to occasion a severe disease. This can only be accounted for, from the greater admixture of variolous matter. He admits, that out of sixty-two persons who were inoculated with the pustule matter, fifty-seven had an eruption ; and that those who received

the disease from any of these fifty-seven patients, had pustules in nearly the same proportion: he also very candidly remarks, that the varioliform disease which in one instance proved fatal, owed its origin to matter of this description. With how much reason might these fifty-seven cases have exclaimed,

*Ætas parentum, pejor avis, tulit
Nos nequiores, mox daturos
Progeniem vitiosiore!*

I perfectly agree with Dr. Woodville, that although the Cow-pox may, in some cases, either degenerate or improve, yet in others, it is capable of continuing itself for a while, under this new and casual modification. We agree in the fact; and only differ about the cause.

One important advantage which the Cow-pox has over the small-pox is, as Dr. Woodville justly remarks, that the Cow-pox is a disease not contagious in the form of effluvia. He confesses, that this is certainly true, when the disorder is confined to the inoculated part: but he entertained a different opinion of it, when numerous pustules were produced. Then, he apprehended that the exhalations which the pustules send forth, are capable of infecting others like the small-pox. In this opinion every one must coincide, who believes, that cases where numerous pustules appear, are, for the most part, cases of real small-pox.

Dr. Woodville concludes with declaring, that the proofs in favour of the Cow-pox, as a protection against the small-pox, are unquestionably decisive; and sufficient to establish the fact in the most satisfactory manner; he also affirms, that no formidable inflammation or ulceration of the arm has taken place, in any of the patients under his case. Nothing but *aq. litharg. acct.* was applied; and that only in one case.

Dr. Jenner having expressed a doubt in his Continuation of Facts, &c. whether eruptions, similar to those described by Dr. Woodville, were ever produced by the pure uncontaminated Cow-pock virus, and advanced an opinion, that they originated from the variolous matter, with which many of the patients were inoculated after the vaccine matter had been applied; observes that the matter thus propagated became the source of future inoculations, in the hands of many medical gentlemen, who appeared to have been previously unacquainted with the nature of the Cow-pox.

He adverts to the subsequent report of Dr. Woodville, by which it appears that fewer pustulous cases then occurred; which Dr. Woodville ascribed to a greater caution used in the choice of matter; since none had been employed of late, but what had been taken from those patients, in whom the Cow-pox proved very mild and well characterized.

Dr. Jenner rejects this hypothesis: but for my

own part, I cannot help thinking it well founded; although some other causes might have a share in producing this change. We have already seen, that out of 62 persons inoculated with pustule matter, 57 had an eruption; and that those who were inoculated from the arms of such as had varioliform pustules, had also a greater disposition to pustules, than those who were inoculated from such as had only the solitary vaccine pustule.

A suspicion having been expressed by Dr. Jenner, that the matter used by Dr. Woodville was contaminated, Dr. Woodville in his last pamphlet endeavours to vindicate himself from that charge. He himself certainly is not convinced of its being contaminated; otherwise, I am persuaded, he would not continue to use it; but those who read his reports may perhaps draw a different conclusion.

Dr. Jenner says, that when he considers the great number of cases of casual inoculation immediately from cows, which have from time to time presented themselves to his observation, and many others which have been communicated to him by medical gentlemen, without any thing like a variolous pustule appearing, he cannot imagine that those described by Dr. Woodville were produced by pure vaccine matter.

To this Dr. Woodville replies, that the casual Cow-pox “differs considerably from that which is

the effect of a regular inoculation." This is true, as far as regards external appearances; but not in respect to the virus contained, which is specifically the same.

Dr. Woodville also alledges, that, "according to Dr. Jenner's own statement, the cows readily communicate the infection to the persons who milk them, although such persons have undergone the small-pox." On the other hand, he observes, Dr. Pearson's attempts to give the Cow-pox by inoculation to those who had had the small-pox proved ineffectual.

Without questioning the accuracy of the statements of either of these gentlemen, as far as their information or experience went, exceptions have occurred to both their propositions. Persons have been known to resist the Cow-pox after the small-pox, when exposed to it in milking cows; and others have caught the Cow-pox after the small-pox, when inoculated with it from the human subject. If the infection is communicated more frequently to those who are exposed to the virus in the cow, than to those who are exposed to that of the human body, this may be owing to the *quantity*, and not to the quality of the virus applied; for whether the virus of the cow, or that excited in the human body, is used in inoculation, not the least difference is perceived.

In regard to the ready susceptibility of the Cow-pox after the small-pox, for which Dr. Woodville

pleads the authority of Dr. Jenner himself, this is a point not quite so clear as Dr. Woodville seems to apprehend. By the account of the Cow-pox communicated to Dr. Pearson by Dr. de Salis, it appears, that of four men employed in milking cows at a farm where that disorder raged, only one had had the small-pox, and he quite escaped it.

It appears also by Dr. Pearson's Inquiry, page 31, according to the evidence of a servant of Mr. Francis, who keeps a farm for milch cows on the road to Somers' Town, a man of veracity, and good understanding, who had lived in dairy farms all his life, that those who have had the small-pox cannot catch the Cow-pox. He himself had the small-pox when seventeen years of age; but never caught the Cow-pox, although he had milked a great number of cows labouring under the disease, by which other milkers were infected.

Dr. Jenner himself, on whose evidence Dr. Woodville rests his assertion, seems to have been so far from thinking, that the cows readily communicated the disease to those who have had the small-pox, that he says, "*It is a fact so well known among our dairy farmers, that those who have had the small-pox, either escape the Cow-pox, or are disposed to have it slightly; that as soon as the complaint shews itself among the cattle, assistants are procured, if possible, who are thus rendered less susceptible of*

it, otherwise the business of the farm could scarcely go forward."

Professor Wall, in his letter to Dr. Pearson, says, "some are decidedly of opinion, that a person who has had the small-pox is insusceptible of the infection of the Cow-pox; others are doubtful of that circumstance."

It is now generally understood, and acknowledged by that gentleman himself, that when Dr. Jenner published his first account of this disease, the two great truths, the safety and efficacy of the new practice were well known to him; but many points of less consequence were still enveloped in obscurity.

Dr. Pearson met with an additional instance of the difficulty with which persons who have had the small-pox are infected with the Cow-pox, at Mr. Rhodes's farm at Islington. A man who had undergone the small-pox when a child, though frequently exposed to the Cow-pox when others caught it, had always escaped infection.

When Dr. Jenner published the first part of his work, he entertained an opinion, that the constitutional as well as local symptoms of the Cow-pox might recur, as often as a person was exposed to infection, by milking cows labouring under that distemper. But in the second part he says, he is led to conjecture, that they who have had the small-pox

are insusceptible of the primary action of the Cow-pock virus; and that he may have been mistaken in his former observation on this subject.

So far from thinking, the virulence of the casual disease is owing to a greater degree of acrimony in the virus, he gives his decided opinion, that a matter is generated in the human subject by vaccine inoculation, similar to that which was inserted from the cow; that it is an accidental circumstance only which can render this a violent disease. If the hands of the milkers are covered with accidental sores, the disease will be in proportion.

Were the poison more virulent in the cow, we should expect to see appearances reversed; and that a patient labouring under the casual Cow-pox, would be covered with pustules from head to foot, and sink under the burden; instead of this, we are assured by Dr. Jenner, in his *Continuation of Facts*, that *neither the farmers nor the medical people of his neighbourhood have noticed such an occurrence.*

In the same tract we are informed by Dr. Jenner, that some of his correspondents have mentioned the appearance of small-pox like eruptions, at the commencement of their inoculations; but in these cases, the matter was derived from the original stock at the Small-pox Hospital. It is not the occasional appearance, but the frequent occurrence of pustules resembling the small-pox, that distinguishes the matter

generated in that place; and if the matter itself were not vitiated, the pustules would be confined, in general, to the hospital, and other places where variolous infection prevails.

In this tract Dr. Jenner asserts, that “although the susceptibility of the virus of the Cow-pox is for the most part lost in those who have had the small-pox, yet in some constitutions it is only *partially* destroyed, *and in others it does not appear to be in the least diminished.*”

Of the accuracy of this opinion, which longer experience and more mature observation have enabled Dr. Jenner to form, I am well convinced. That the habit is commonly rendered insusceptible, or nearly so, of the action of vaccine virus by the small-pox, is now generally allowed; yet, many years after he had undergone the small-pox, I succeeded in exciting a perfect vaccine pustule on each arm, in my nephew Mr. John Ring, who is at this time under the tuition of Mr. Thompson, an eminent surgeon of Rochester. With matter taken from one of these pustules Mr. Thompson inoculated a man; and produced both the local and constitutional disease.

By far the greater number on whom trials were made by Dr. Jenner, resisted it entirely. Yet he found some, on whose arms the pustule from inoculation was formed completely; but without the blush that commonly attends it, or any constitutional illness; while

others had the disease in the most perfect manner. It may not be amiss to mention, as a proof that the system becomes less and less susceptible of any impression from the vaccine as well as variolous poison, that my nephew was twice more inoculated with vaccine matter, by my desire, but without effect.

A striking instance of the susceptibility of the Cow-pox after the small-pox, was communicated to Dr. Jenner by Mr. Fewster, surgeon, of Thornbury. In this case, among other children inoculated by Mr. Fewster with vaccine matter, one had been inoculated with the small-pox when a year old, and had a full burden, of which his face bore plentiful marks; a circumstance with which Mr. Fewster was not previously made acquainted. On the sixth day, his arm appeared as if inoculated with variolous matter; but the pustule was rather more elevated. On the ninth, he complained of violent pain in his head and back; accompanied with vomiting and much fever. The next day he was very well, and went to work as usual. The punctured part began to spread; and there was the areola around the inoculated part, to a considerable extent.

From the foregoing facts it appears evident to me, that those persons who have had the small-pox, are neither so readily susceptible of the disease from the cow, nor so insusceptible of it from the human subject, as Dr. Woodville imagines; that the different degree of the disease in the casual and artificial modes, depends on the size and number of the

wounds receiving the poison; and that, as no purulent eruptions usually attend the casual disease, however virulent, it is not probable they would often occur in that occasioned by inoculation.

As to the blueness of the pustule, which Dr. Woodville considers as a diagnostic of the casual disease, it arises from the greater irritability and vascularity and exposure of the parts infected; and is neither always met with in the casual, nor always wanting in the artificial disease. I have repeatedly seen it, when the pustule of an inoculated patient has been injured by pressure or friction, to which the pustules in the casual complaint are constantly exposed; and in one instance which I saw, where a medical man inoculated his thumb by accident, Dr. Jenner told me, that it exactly resembled the casual disease.

Hence also it appears, that arguments wholly founded upon the strict analogy between the inoculated and casual Cow-pox, ought not to be considered so inconclusive as Dr. Woodville imagines. Yet Dr. Jenner's arguments are not wholly founded on analogy; they rest also on the solid foundation of well-established facts.

Dr. Woodville asserts, that from the manner in which Dr. Jenner has referred to the inoculations conducted by him during the three preceding years, the reader may be led to infer, that his experience had been as extensive as that of Dr. Woodville.

Possibly some readers may be inclined to draw this inference; especially if weight instead of number may be suffered to preponderate. If the practice of Dr. Jenner had not at that time been equally *extensive* with that of Dr. Woodville, it had been *more genuine*, and *more successful*.

The apparent inconsistency in Dr. Jenner's account of the matter sent from the Small-pox Hospital, Dr. Woodville himself attributes, I presume with equal candour and justice, to inadvertency. He maintains, that, should all Dr. Jenner contends for be granted, still none of his observations can apply to those patients who had pustules, though inoculated with matter taken immediately from the cow; and to whom no variolous matter was applied, during the whole progress of the infection.

But, allowing that a vaccine patient has not variolous matter applied to him in a *palpable form*, what proof can we have, that all the patients included in Dr. Woodville's reports were not obliged to inspire the variolated atmosphere of the Small-pox Hospital, during the progress of the Cow-pox infection? If the poison enters, it is of little consequence by what avenue it gains access. What avails the precaution of shutting out a thief at the door, if you let him in at the window?

Though Dr. Woodville differs in opinion from Dr. Jenner, in not attributing the pustular eruptions

to an adulteration of the vaccine matter, yet he readily admits, that they have been, and still continue to be, *the effect of some adventitious cause, independent of the Cow-pox*. This cause, he concludes, is *the variolated atmosphere of the hospital*, which those patients were *obliged to inspire* during the progress of the Cow-pox infection. To confirm this, he remarks, that the same thing took place in the practice of Mr. Ketley, where a promiscuous inoculation was instituted, and *more than half* of the Cow-pock patients, being exposed to *variolous effluvia*, had pustules.

From the results of the two extensive trials of mixed inoculation, in the hands of Dr. Woodville and Mr. Evans, as well as from several instances which I have seen, where persons were unavoidably exposed to the infection of the small-pox, during the infancy and progress of the Cow-pock infection, I am perfectly convinced, that insusceptibility of the small-pox is not *suddenly* but *gradually* produced by virtue of the Cow-pox; and is in all cases produced in proportion to the progress of that disease. Hence, when a testimonial in favour of the Cow-pock inoculation was signed by several gentlemen of the medical profession, it was an error in the editors of a very respectable publication, to alter the form of that testimonial so far as to make those gentlemen declare their opinion, that those who have had the Cow-pox are secure from the infection of the small-pox, “ provided such infection does not

exist in the system at the time of the inoculation of the Cow-pox."

This is, unintentionally, making them declare *much more* than they ever meant to declare. It was substituted by the editors of that work, instead of another expression of a very different import; which was only meant to make the sense more explicit, and to prevent the public from supposing that they were secure from the infection of the small-pox, until they had completely undergone the action of the Cow-pox.

This explanation of the sense of the testimonial, being consonant both with its letter and spirit, it was not thought necessary to send round to so considerable a number of subscribers; especially since it would have created a delay of a month in the publication of the testimonial in the most respectable and important channels. It was suggested by an eminent physician, and adopted by the proposer of the plan; who, from the approbation it has met with, from all those gentlemen with whom he has hitherto conversed on the subject, hopes the reasons here alleged, for the liberty he has taken, will be deemed by others a sufficient apology.

The sinister attempts which were at that time made, to depreciate the practice of vaccine inoculation, by the most shameful manœuvres, and the grossest misrepresentations, called aloud on every medical man

who was enabled to judge of its real merits, to come forward with a testimonial in its favour. It was not meant, by that testimonial, to declare, that all the powers and properties of vaccine virus were well understood, or even in a great measure ascertained; but it was thought by those who signed that declaration, that the prophylactic virtue, and comparative safety of the disease, were sufficiently ascertained, by their own experience, and that of others on whose testimony they could rely, to warrant them in giving it their sanction, and recommending it to the public.

That inoculation of a person with vaccine matter, who is free from variolous infection at the time of such inoculation, is no perfect security from the small-pox, appears probable from the practice of Mr. Evans alone, if no other were adduced. That gentleman communicated the small-pox and the Cow-pox to different persons in the same families, at the same time. Several of the Cow-pock patients slept with others who had full crops of small-pox pustules; and out of sixty-eight patients who had the Cow-pox, thirty-nine had eruptions. In two of them only, the pustules matured, and that imperfectly; but this is often the case in the inoculated small-pox. Were there no other instances, these alone ought to deter us from deciding, that the act of inoculation with Cow-pock matter is a certain *preventive* of the small-pox; or "that the *progress* of the *former* infection *supersedes* that of the *latter*." It is not the commencement or the progress, but the maturity of the

Cow-pox, or the perfect disease, that is a perfect security against the infection of the small-pox.

Dr. Woodville informs us, that at various times he procured fresh matter from the cow, with which he inoculated his patients in the hospital, and with effects exactly similar. Pustules were as frequent as before. He tells us, that the last vaccine matter which he introduced into the hospital, was obtained from Dr. Jenner himself. With this matter he inoculated on the same day three patients, on one of whom about a hundred variolous-like pustules were produced. This instance, he subjoins, and numerous others of a like kind which he could adduce, decidedly prove, that in the hospital, pustules will *frequently* be the consequence, where no doubt can be entertained, of the purity of the Cow-pock matter with which the patients are inoculated.

This *frequent* occurrence of pustules *in* the hospital, if it exonerates the hospital matter from the charge brought against it by Dr. Jenner, transfers the censure to the hospital itself; and proves it to be an unfit place for the inoculation of the Cow-pox, and an emporium of Cow-pock matter.

Dr. Woodville concludes his observations on the origin of pustules with this remark:—"I am disposed to attribute them to the adventitious co-operation of the variolous atmosphere, to which the patients were exposed. In what way the variolous

miasms act in thus modifying the Cow-pox, or why they co-operate in some, and not in all cases of vaccine infection, I shall not even venture a conjecture : the causes probably will continue as inexplicable, as those constitutional peculiarities, which produce all the varieties of small-pox."

After this candid confession, it is in vain to contend, that the two diseases cannot hybridise, or co-exist.

Among other arguments urged by Dr. Woodville, to prove that the casual and artificial Cow-pox differ, one was, that "the local affection in the former case constantly exhibits a deep blue colour, an appearance which the inoculated disease never assumes."

When Dr. Woodville made this assertion, he did not recollect the following passage in his former publication. It occurs in the forty-fourth case.—"He had been inoculated in the hand, as well as in the arm, in order to discover, if the appearance of the tumour, in a part constantly exposed to the air, would be the same, as in the arm kept covered by his dress.—*The difference was very evident ; for the tumour upon his hand was much more extensive, of a more livid colour, and attended with more inflammation than the other.*"

Dr. Woodville is not only inaccurate, in saying that the colour in the artificial disease is never the

same as in the casual, but in his description of the colour of the casual Cow-pox, which he says, is constantly a deep blue. But Dr. Jenner, who must be allowed to have seen it much more frequently, says, that it is of “a colour *distantly approaching to blue* ;” and that the natural disease in the animal is of “a *palish blue*, approaching to livid.”

In the second part of his pamphlet, Dr. Woodville gives an account of the success of his practice, since the last report. About three or four patients out of a hundred, in the hospital, still have pustules. The advantage of vaccine inoculation, he thinks, is satisfactorily evinced. By his former report it appeared, that upwards of 400 Cow-pock patients had been inoculated with the small-pox, and resisted the infection; by the latter report it appears, that above a thousand have been put to the same test, and with the same happy result.

He observes, that the inoculation of the small-pox, as well as that of the Cow-pox, at one time excited much obloquy and opposition, and the clamour against it became so considerable, that it fell into disuse for several years; and several others of the most valuable discoveries in medicine have met with a similar reception.

In regard to the inoculation of the small-pox, Dr. Woodville remarks, “to regulate the disputes, which the introduction of that practice into this coun-

try occasioned, and to direct the controversy to the true points at issue, Dr. Jurin, then Secretary to the Royal Society, judiciously stated, that the fate of inoculation depended upon the decision of the two following questions :

First, “ Whether the distemper given by inoculation, be an effectual security to the patient against his having the small-pox afterwards in the natural way ?

“ *Secondly*, “ Whether the hazard of the inoculation be considerably less than that of the natural small-pox ?”

The application of these remarks to the practice now proposed, is, as Dr. Woodville justly observes, too obvious to require being pointed out.

He next adverts to the ridiculous opinion which has been propagated, and with several persons has had considerable influence ; namely, “ that the power of resisting the infection of the small-pox, which the constitution derives from the vaccine disease, will continue only for a few years.”—This, says Dr. Woodville, is a mere conjecture ; contradicted by facts of casual cases of Cow-pox, and contrary to analogy.

After observing, that the Cow-pock inoculation is placed in a more advantageous point of view by his present, than by his former report, Dr. Woodville

says, that in the last two thousand cases of Cow-pox under his care, not a single alarming symptom was excited; that during the last eight months, he has not met with one instance of the vaccine disease, which has not been as favourable as the mildest cases of variolous inoculation; and that, from the very benign form in which the vaccine pock has of late invariably appeared, he thinks it may be considered as a disease perfectly harmless in its effects.

Dr. Woodville points out the advantage of the Cow-pox over the small-pox, on account of its not propagating itself by effluvia. The inoculation of the small-pox, as he remarks, has greatly contributed to swell the bills of mortality for the metropolis, of which the public have long and justly complained: and he deems it not unreasonable to conclude, that if the new inoculation were to be universally adopted, the small-pox, in process of time, may be wholly extinguished.

Some remarks are made by Dr. Woodville, concerning the best mode of inoculating with Cow-pock matter. He is of opinion, that the reason why it oftener fails to communicate infection, when suffered to dry upon a lancet before it is used, than variolous matter, is not owing to its being more volatile than the latter, but to its becoming harder, and more difficult of solution. This agrees with my own observations, and those of my correspondents. Dr. Woodville therefore judiciously recommends, that care

should be taken to moisten it *a considerable time* before it is used.

He prefers the method of repeatedly scratching the cuticle, until the instrument reaches the true skin, and becomes tinged with blood, to the common puncture. In this respect, I apprehend, few practitioners will follow his example.

According to Dr. Woodville's experience, about one person in sixty is insusceptible of the small-pox. It is, however, impossible to prove, that such persons as are insusceptible of that disease have not already had it in a slight degree, so as to escape observation. This is another reason, why vaccine, as well as variolous inoculation, must sometimes fail.

Dr. Woodville thinks, that "when a considerable tumour, and an extensive redness, take place at the inoculated part, within two or three days after the infectious matter has been applied, the failure of inoculation may be considered as certain, as where neither redness nor tumour is the consequence." My experience justifies me in saying, the failure is not equally certain.

Dr. Woodville judiciously cautions every practitioner, not to suppose that inflammation, rapidly advancing to an irregular suppuration about the sixth or seventh day, producing a festering, or crustaceous sore, is any security against the small-pox. But he

is of opinion, that a proper pustule, though it continue for one or two days only, is as effectual as where the tumour has proceeded in the most regular manner.

Dr. Woodville's Observations on the Cow-pox conclude with some remarks on the subject of pustules, appearing under vaccine inoculation. That such have sometimes occurred, is certain; that they seldom occur, where the vaccine matter is pure, and the patient is not exposed to a variolated atmosphere, I consider as equally certain.

As a further confirmation of this opinion, and as an additional proof of the safety and efficacy of the Cow-pox, I shall here present my readers with a transcript of Dr. Marshall's two letters to Dr. Jenner, published in the third part of Dr. Jenner's work. I shall make no apology to those gentlemen for the freedom I take, convinced as I am, that they have nothing so much at heart as the diffusion of that knowledge, which tends most to alleviate the miseries of mankind.

Dr. Marshall's first letter to Dr. Jenner.

“ DEAR SIR,

“ MY neighbour, Mr. Hicks, having mentioned your wish to be informed of the progress of the inoculation here for the Cow-pox, and he also

having taken the trouble to transmit to you my minutes of the cases which have fallen under my care, I hope you will pardon the further trouble I now give you in stating the observations I have made upon the subject. When first informed of it, having two children who had not had the small-pox, I determined to inoculate them for the Cow-pox whenever I should be so fortunate as to procure matter proper for the purpose. I was therefore particularly happy when I was informed, that I could procure matter from some of those whom you had inoculated. In the first instance, I had no intention of extending the disease further than my own family, but the very extensive influence which the conviction of its efficacy in resisting the small-pox has had upon the minds of the people in general, has rendered that intention nugatory, as you will perceive by the continuation of my cases enclosed in this letter*, by which it will appear, that since the 22d of March, I have inoculated 107 persons; which, considering the retired situation I reside in, is a very great number. There are also other considerations which, besides that of its influence in resisting the small-pox, appear to have had their weight; namely, the peculiar mildness of the disease, the known safety of it, and its not having in any instance prevented the patient from following his ordinary business. In all the cases under my care, there have only occurred

* " Dr. Marshall has detailed these cases with great accuracy, but their publication would now be deemed superfluous. E. J."

two or three which required any application, owing to erysipelatous inflammation on the arm, and they immediately yielded to it. In the remainder the constitutional illness has been slight, but sufficiently marked, and considerably less than I ever observed in the same number inoculated with the small-pox. In only one or two of the cases have any other eruptions appeared, than those around the spot where the matter was inserted, and those near the infected part. Neither does there appear in the Cow-pox to be the least exciting cause to any other disease, which in the small-pox has been frequently observed, the constitution remaining in as full health and vigour after the termination of the disease as before the infection. Another important consideration appears to be, the impossibility of the disease being communicated, except by the actual contact of the matter of the pustule; and consequently the perfect safety of the remaining part of the family, supposing only one or two should wish to be inoculated at the same time.

“ Upon the whole, it appears evident to me, that the Cow-pox is a pleasanter, shorter, and infinitely more safe disease, than the inoculated small-pox when conducted in the most careful and approved manner; neither is the local affection of the inoculated part, or the constitutional illness, near so violent. I speak with confidence on the subject; having had an opportunity of observing its effects upon a variety of constitutions, from three months old to sixty years; and to which I have paid particular attention. In the

cases alluded to here, you will observe that the removal from the original source of the matter has made no alteration or change in the nature or appearance of the disease; and that it may be continued, *ad infinitum* (I imagine), from one person to another, (if care be observed in taking the matter at a proper period), without any necessity of recurring to the original matter of the cow.

“ I should be happy, if any endeavours of mine could tend further to elucidate the subject; and shall be much gratified in sending you any further observations I may be enabled to make.

“ I have the pleasure to subscribe myself,

“ Dear Sir, &c.

“ JOSEPH H. MARSHALL.”

Eastington, Gloucestershire,

April 26th, 1799.

“ The gentleman who favoured me with the above account, has continued to prosecute his inquiries with unremitting industry, and has communicated the result in another letter, which at his request I lay before the public without abbreviation.”

Dr. Marshall's second letter to Dr. Jenner.

“ DEAR SIR,

“ SINCE the date of my former letter, I have continued to inoculate with the Cow-pox

virus. Including the cases before enumerated, the number now amounts to 423. It would be tedious and useless to detail the progress of the disease in each individual: it is sufficient to observe, that I noticed no deviation in any respect from the cases I formerly adduced. The general appearances of the arm, exactly corresponded with the account given in your first publication. When they were disposed to become troublesome by erysipelatous inflammation, an application of equal parts of vinegar and water always answered the desired intention. I must not omit to inform you, that when the disease had duly acted upon the constitution, I have frequently used the vitriolic acid. A portion of a drop, applied with the head of a probe, or any convenient utensil, upon the pustule, suffered to remain about forty seconds, and afterwards washed off with sponge and water, never failed to stop its progress, and expedite the formation of a scab.

“ I have already subjected 211 of my patients to the action of variolous matter, *but every one resisted it.*

“ The result of my experiments (which were made with every requisite caution) has fully convinced me that the *true Cow-pox* is a safe and infallible preventive from the small-pox; that in no case which has fallen under my observation has it been in any considerable degree troublesome, much less have I seen any thing like danger; for in no instance were the

patients prevented from following their ordinary employments.

“ In Dr. Woodville’s publication on the Cow-pox, I notice an extraordinary fact. He says that the generality of his patients had pustules. It certainly appears extremely extraordinary, that in all my cases there never was but one pustule; which appeared on a patient’s elbow on the inoculated arm, and matured. It appeared exactly like that on the incised part.

“ The whole of my observations, founded as it appears on an extensive experience, leads me to these obvious conclusions; that those cases which have been, or may be, adduced against the preventive powers of the Cow-pox, could not have been those of the true kind; since it must appear to be absolutely impossible, that I should have succeeded in such a number of cases, without a single exception, if such a preventive power did not exist. I cannot entertain a doubt, that the inoculated Cow-pox must quickly supersede that of small-pox. If the many important advantages which must result from the new practice are duly considered, we may reasonably infer, that public benefit, the sure test of the real merit of discoveries, will render it generally extensive.

“ To you, Sir, as the discoverer of this highly beneficial practice, mankind are under the highest obligations. As a private individual, I participate in

the general feeling; more particularly as you have afforded me an opportunity of noticing the effects of a singular disease; and of viewing the progress of the most curious experiment that ever was recorded in the history of physiology.

“ I remain, Dear Sir, &c.

“ JOSEPH H. MARSHALL.”

“ P.S. I should have observed, that of the patients I inoculated and enumerated in my letter, 127 were infected with the matter you sent me from the London cow. I discovered no dissimilarity of symptoms in these cases, from those which I inoculated from matter procured in this country. No pustules have occurred, except in one or two cases, where a single one appeared on the inoculated arm. No difference was apparent in the local inflammation. There was no suspension of ordinary employment among the labouring people; nor was any medicine required.

“ I have frequently inoculated one or two in a family; and the remainin gpart of it some weeks afterwards. The uninfected have slept with the infected during the whole course of the disease, without being affected; so that I am fully convinced that the disease cannot be taken, but by actual contact with the matter.

“ A curious fact has lately fallen under my observation, on which I leave you to comment.

“ I visited a patient with the confluent small-pox, and charged a lancet with some of the matter. Two days afterwards I was desired to inoculate a woman and four children with the Cow-pox, and I inadvertently took the vaccine matter on the same lancet which was before charged with that of small-pox. In three days I discovered the mistake, and fully expected that my five patients would be infected with small-pox; but I was agreeably surprised to find the disease to be the genuine Cow-pox, which proceeded without deviating in any particular from my former cases. I afterwards inoculated these patients with variolous matter, but all of them resisted its action.

“ I omitted mentioning another great advantage that now occurs to me in the inoculated Cow-pox; I mean the safety with which pregnant women may have the disease communicated to them. I have inoculated a great number of females in that situation, and never observed their cases to differ in any respect from those of my other patients. Indeed the disease is so mild, that it seems as if it might at all times be communicated with the most perfect safety.”

To these testimonies in favour of the Cow-pox from Dr. Marshall, I can now add others from the same respectable quarter. When he was in London, previous to his sailing for Naples, in order to establish this beneficial practice in that country, he in-

formed me, that the number he had then inoculated amounted to near a thousand. In answer to the enquiry, whether he had lately met with any thing new in the vaccine inoculation, he replied, that he had met with nothing new; that the disease was so constantly mild, as to furnish scarcely any thing worthy of particular remark.

I have just received a letter from him, strongly characteristic of that ardour, which every real friend to the true interests of humanity must feel on this important occasion. It is dated from His Majesty's ship *Endymion*, off the Rock of Lisbon, July 29, 1800. The following extract will in some measure shew the zeal with which he is animated, in his laudable undertaking.

“ I have seized the first opportunity to inform you of the progress I make in my voyage, and to say farther, that so far all goes well.

“ Sir Thomas Williams has entered into the investigation of the subject, with an earnestness that all liberal and well-informed minds feel for the ascertaining of curious and interesting facts.

“ I have, with his permission, and with his earnest recommendation to the ship's company, inoculated several of them with the matter you were so good as to send me, dated the 15th inst. and also of the next

prior date, both with success; and have now got a fresh stock from my own patients."

The zealous exertions of the gallant commander, with whom Dr. Marshall is so fortunate as to sail, reflect on him great honour, but unless Dr. Marshall is mistaken in his opinion, we must suppose there are persons in that profession, who are not liberal, or not well informed.

One thing is certain; that no vessel, however laden with the plunder of the old, or of the new world, ever bore so rich a freight, as that which bears this sovereign prophylactic. Naples, already protected by the valour of a Nelson, will consider Britain as her tutelary genius, and exclaim,

Salve, magna parens frugum, Saturnia tellus,
Magna virum! —————

————— atque hanc sine, tempora circum,
Inter victrices ederam tibi serpere lauros!

To the testimony of Dr. Marshall, in favour of the new practice, Dr. Jenner subjoins that of Mr. Tierney; who declares, that the constitutional symptoms, which appear on the eighth or ninth day after inoculation, scarcely deserve the name of a disease. He inoculated four of his patients, who had undergone the Cow-pox, with variolous matter; inserting it in each of them, *several times* under the cuticle. This produced a slight inflammation on the second and third day; which always disappeared before the

fifth or sixth; except in one instance, where there seems to have been a peculiar irritability of the skin. In this instance, the patient had had the Cow-pox before, and also received it by inoculation; in him, the puncture where variolous matter was inserted, inflamed; and his arm was much sorer than from the insertion of Cow-pock virus; but there was no pain in the axilla, nor could any constitutional affection be observed.

Mr. Tierney concludes his evidence in favour of the practice with declaring, that he is now fully satisfied of the efficacy of the Cow-pox in preventing the small-pox; and that it is a most happy and salutary substitute for that disease.

Dr. Jenner next gives some striking instances of the power of the Cow-pox in superseding the small-pox, after the patient had been several days exposed to that infection. He calls this, suspending the small-pox; which is evidently a mistake; the disease was not merely suspended, which would have been of but little advantage; but, if it ever existed, it was totally extinguished by the predominant power of the Cow-pox.

One of these cases is communicated to Dr. Jenner by Mr. Lyford, an eminent surgeon of Winchester; who, after giving an account of his extensive and successful practice in the vaccine inoculation, relates the following cases.

Two children, who had been five days exposed to the small-pox, were inoculated with Cow-pock matter; and the small-pox is said to have been totally superseded. Six instances of the same kind are related by Mr. Jenner, where the patients had been exposed four days to the infection of the small-pox; and, as well as in the former cases, continued exposed to that infection, during the whole course of inoculation. On the arm of one, it failed to produce any effect; and of course the small-pox took place; the rest were preserved from that distemper, although five of them slept in the same bed with their brother, who was confined to it with the small-pox in the natural way.

To prevent any disappointment in future, Dr. Jenner advises, that in similar circumstances, the patient should be inoculated in both arms. I beg leave to add, that two or more punctures may be made, contiguous to each other; and that more than ordinary care should be taken, to ensure infection if possible, by imbuing the lancet well with fresh matter, and repeatedly applying it to the punctures.

I have inoculated with Cow-pock matter, a considerable number of persons who had previously been exposed to the infection of the small-pox; and in general succeeded in superseding that infection. In a few cases, the disease took its natural course; but, except in one instance, its virulence appeared to be greatly diminished.

The practice of vaccine inoculation has not been prosecuted by medical men in general, with that ardour, which its merits deserved, and its importance demanded. From the reluctance of some gentlemen to admit any thing in favour of the proposed substitute for the small-pox, and their readiness to admit any thing against it, I have sometimes been inclined to suspect, that they were unwilling to part with their old friend.

Their superficial enquiries have only served to excite doubts, and to perplex their minds. They fondly conceive, that the enquiries of others have been as superficial as their own; that others have greater faith in the efficacy of vaccine inoculation, not from possessing a greater share of knowledge, but a greater share of credulity than themselves. Hence their short-lived triumph, on finding that the Cow-pox could not always supersede the small-pox. Hence their conclusion, that, because the new practice was not capable of doing every thing, it was capable of doing nothing.

Dr. Jenner relates a case of co-existence of Cow-pox and scarlatina, where the Cow-pock pustule advanced to a state of maturity, without any deviation from its ordinary progress; but there was a total suspension of the areola that surrounded it, during the continuance of the scarlatina.

He witnessed the same thing in the measles. But

this is not always the case; one instance of the contrary I have already mentioned.

Another case is related by Dr. Jenner, where the afflorescence forming the areola round the Cow-pock pustule was considerable. In this instance, the Cow-pox predominated, and suspended the scarlatina.

Dr. Jenner condescends to notice the ridiculous opinion, that the security from the small-pox, obtained by means of the Cow-pox, is of a temporary nature. This supposition, he says, "is refuted, not only by analogy, but by incontrovertible facts, which appear in great numbers against it. To those already adduced in the former part of my first treatise, many more might be added, were it deemed necessary; but among the cases I refer to, one will be found of a person, who had the Cow-pox fifty-three years, before the effect of the small pox was tried upon him. As he completely resisted it, the intervening period, I conceive, must necessarily satisfy any reasonable mind. Should further evidence be thought necessary, I shall observe, that among the cases presented to me by Mr. Fry, Mr. Darke, Mr. Tierney, Mr. H. Jenner, and others, there were many whom they inoculated ineffectually with variolous matter, who had gone through the Cow-pox many years before this trial was made."

Dr. Jenner says he feels less anxiety than he for-

merly did, considering the inflammation of the arm. In this third part of his treatise, he recommends saturnine applications, in case that symptom should occasion the least alarm; and, if the scab should happen to be rubbed off prematurely, he advises us to apply the *aq. litharg. acet.* undiluted, in order to coagulate the surface, and prevent a sore.

He confirms the opinions he had formerly given, that the Cow-pox has no tendency to produce the scrofula; and that it is uniformly found to be an effectual security against the small-pox. He may now say,

Jamque opus exegi, quod nec Jovis ira, nec ignis,
Nec poterit ferrum, nec edax abolere vetustas.
Cum volet illa dies, quæ nil nisi corporis hujus
Jus habet, incerti spatium mihi finiat ævi :
Parte tamen meliore mei super alta perennis
Astra ferar, nomenque erit indelebile nostrum.

A man who has attentively perused half what has been written on this subject by Dr. Jenner alone, and continues a sceptic, with regard to the utility of the practice which he recommends, must be slow of faith, or dull of apprehension. But here are some who have never taken the trouble to read a syllable of his works; who nevertheless have the presumption to give their opinions on the subject; and it is possible there may be others, who are now convinced, but too proud to acknowledge their past error.

Against the ignorance, artifice, and misrepresentation of such persons, I deem it the indispensable

duty of every man, who is sensible of the advantage likely to accrue from this practice, to warn the public. No hope can be entertained of converting such men, or at least, of making them acknowledge their conversion; but I doubt not of being able to convince others, of the folly of trusting to their decision.

These gentlemen contend, that no one can with propriety recommend the practice, unless he can bring incontestible proofs that it never has failed, and never will fail. This is a very modest and reasonable demand. It would be just as reasonable to expect, that he should give an opponent of the practice a capacity to judge of its merits; and candour to acknowledge his conviction.

What would be the fate of inoculation of the small-pox, were it to be subjected to that severe scrutiny? We hear of innumerable instances, where it has failed to prevent the natural small-pox. Mr. Rush lately informed me of two cases of this kind, which he learned from the surgeon in whose practice they occurred.

According to the new-fangled logic of the anti-vaccinists, it is not sufficient that the practice is useful, it is not sufficient that the practice is of inestimable value; it must also be perfect and infallible. According to the principles of these infallible judges, they must reject the whole practice of medicine, because it is not perfect; and even the blessing

of health, because they are not invulnerable and immortal.

To those who are not blinded with prejudice, half of what has been written on the subject must appear superfluous, had not the advocates of the new practice the secret machinations, and gross representations, of envy and jealousy to encounter. The adversaries of vaccine inoculation reason, if what they say on this topic can be called reasoning, as if it was founded on a discovery of yesterday; and not on the broad basis of long and extensive observation.

The argument in favour of Cow-pock inoculation is, that it is a preventive of the small-pox. That exceptions, or apparent exceptions, may possibly take place now and then, as in the inoculation of the small-pox itself, the most strenuous advocates of this practice may readily admit; but when the enemies of vaccine inoculation pronounce judgment against it on that account, we appeal with confidence to the tribunal of the public.

So far is prejudice capable of influencing even minds in other respects enlightened, that a very respectable member of the medical profession declared in public, if the spurious Cow-pox was liable to be mistaken for the genuine, the practice of vaccine inoculation ought to be damned. A little reflection, however, will convince that gentleman, that such a censure will fall more heavily on the inoculation of

the small-pox, which he approves of. If the false Cow-pock matter be employed, the error will as easily be detected, as when a wrong sort of matter is used instead of the variolous; and a practitioner who has committed that error, will, if he is qualified for the duties of his profession, either consult the writings of Jenner, in order to learn the true characteristics of the disease, or procure matter from those who are better judges than himself.

It is difficult for practitioners in general to procure matter from the cow; and therefore a few of those who are most engaged in the Cow-pock inoculation, and are able to preserve the species, are in the habit of supplying others. This matter, in the hands of several individuals, has sustained a trial which the variolous matter never sustained. Every method of infecting with the small-pox those who have undergone the vaccine inoculation has been tried; but tried in vain. The virus, which is so perpetuated, and is able to abide such a test, is more certain to be genuine, than that which is commonly employed in inoculation for the small-pox.

These remarks appeared to me necessary. They may serve, in some measure, to disperse the mist of prejudice, which those who are hostile to the practise have laboured to excite. These gentlemen, either not knowing, or not acknowledging its utility, call that enthusiasm in its favour, with which others

are inspired, madness. Would to heaven, this madness were a little more infectious!

That the Cow-pox is, beyond all comparison, a milder and safer disease than the small-pox, is now generally understood, and acknowledged. That it is an effectual security against the small pox, abundant proof has already been advanced. For the sake however, of those persons, if any such there be, who still harbour doubts on that subject, I shall adduce other testimonies of this important truth.

Dr. Pearson, in his Enquiry into the History of the Cow-pox, has collected a mass of evidence, by which alone, if we had no other proof, the fact is clearly substantiated; and rendered more incontrovertible, than almost any other in the whole circle of medicine.

We are told by Dr. Pearson that Sir George Baker had been informed of the fact many years ago, by his relation, The Rev. Mr. Herman Drewe, of Abbots; but as the statement did not obtain credit at that time, it was not published.—Sir George Baker assured me, that he received a great number of letters on this occasion, tending to confirm the point in question.

Being desirous of knowing, whether there was any allusion to this disease in any ancient author, I wrote to Dr. Jenner on that subject, who favoured me

with the following answer.—“ I know of no direct allusion to the disease, in any ancient author ; yet the following seems not very distantly to bear upon it. When the Duchess of Cleveland was taunted by some of her companions, that she might soon have to deplore the loss of that beauty which was then her boast, (the small-pox at that time raging in London), she made a reply to this effect,—that she had no fears about the matter, for she had had a disorder, which would prevent her from ever catching the small-pox. This was lately communicated by a gentleman in this county ; but unfortunately he could not recollect, from what author he derived his intelligence.”

The papers which Sir G. Baker had received being lost, Dr. Pearson wrote to Mr. Drewe, who had availed himself of great opportunities of enquiring into the nature of the Cow-pox, during his residence in Dorsetshire.—From him information was received, “ that Mr. Bragg of Axminster, who inoculated the parish of Abbots, inoculated three women *who had had the Cow-pox ; that he charged them with a superabundance of matter, but to no purpose.*”

All his other patients, amounting to more than fifty, took the infection ; but the three women were not in the least disordered, *even though they associated constantly with those who were infected.*

Mr. Drewe ascertained thirteen similar instances, at the same time, in the same neighbourhood. He

observes that the disease is epizootic in Devonshire, Dorsetshire, and Somersetshire; and he doubts not but it is also to be met with in other parts. He gained his information, not only from the gentleman abovementioned; but also from Mr. Downe, surgeon, of Bridport, and Mr. Barry of Colyton, who is since dead.

Dr. Pulteney of Blandford informed Dr. Pearson, that the disease is well known, not only in the counties beforementioned, but also in Hampshire, Leicestershire, and other midland counties: that dairy men keep it a secret as much as possible; as it is disreputable to the cleanliness of the produce. He says, an intelligent and respectable inoculator in that part of the country informed him, that of several hundreds whom he had inoculated for the small-pox, who had previously had the Cow-pox, very few took the infection; and such as did, he had great room to believe, were themselves deceived, in regard to their having had the Cow-pox.

I lately saw a lady, who, about eleven years ago, caught the disease by milking her father's cows. This happened in the county of Norfolk; and is an additional proof, that the Cow-pox is not merely an endemic, and confined to Gloucestershire. This lady has been frequently exposed to the infection of the small-pox; and, till lately, wondered how she could escape that distemper.

The idea that this disease is only to be met with in Gloucestershire, is contrary to all the accounts that have been published on the subject.—The first county where matter was procured after Dr. Jenner communicated to the world the first intelligence on the subject of the disease, was Middlesex. Since that time it has been discovered in various parts, at home and abroad. Hence the absurdity of that frivolous argument of some Frenchman, that providence never intended the Cow-pox as a remedy to eradicate a universal disease, since it was only found in one small county.

His premises are false, and his conclusion is ridiculous. It has been justly observed, that by the same mode of reasoning you might prove, that the bark will not cure an ague, because it is only found on the mountains of Peru.

To return to our subject: Dr. de Salis, in a letter to Dr. Pearson, gives additional evidence in favour of the Cow-pox, as a preventive of the small-pox. He says in a letter from Wing, in Buckinghamshire, "I have heard a good deal of the Cow-pox in this country." This again, refutes all idea of the locality of the disease. The cases which are brought forward by this respectable divine tend to prove, that the Cow-pox and the small-pox have a reciprocal power of rendering the habit insusceptible of each other's infection. In the dairy farm at Wing, where the Cow-pox raged three years before the date of Dr.

de Salis's letter, it had not appeared for the preceding fourteen or fifteen years.

Mr. Downes, surgeon, of Bridport, in a letter to Dr. Pearson, relates several cases, where persons who had undergone the Cow-pox, were inoculated with variolous matter without effect. He also produces one instance, where a woman who had gone through the small-pox, continued milking cows during the whole time they laboured under the disease, without suffering the least inconvenience; while her two sons and her daughter had the vaccine eruption, and all its attendant symptoms, in a regular way.

This gentleman states, that the Cow-pox so rarely occurs, as to render the sources of information very scanty. It must, however, be recollected, that it is a disorder which, for obvious reasons, requires concealment; and may therefore be much more frequent, than it is commonly supposed to be. It is worthy of observation, that Mr. Downe does not simply say, he inoculated those who had had the Cow-pox with variolous matter in vain; but that, when he inoculated a great number for the small-pox, there were one or two, *whom he could not by any means infect*; and, upon enquiry he found they had previously had the Cow-pox.

After observing, that some families, who had undergone the Cow pox, were *repeatedly* innoculated

with the matter of the small-pox, but without effect; he informs us, that a medical man in that part of the country was injured in his practice, by a prejudice raised unjustly, that he intended to substitute the Cow-pox for the small-pox.

Mr. Downe thinks the prejudice of the public so great an enemy to improvement, that experiments of importance can only be made in hospitals. Dr. Jenner, however, fortunately for mankind, thought otherwise; and, by a manly perseverance in the prosecution of his experiments, has done much towards conquering the great enemy of all improvement, the opposition of ignorance, or, in other words, the prejudice of the public.

Mr. Downe's testimony tends to corroborate the opinion, which is now sufficiently established, that the small pox and Cow-pox mutually render the habit insusceptible of each other. This is, at least, certain, as a general rule, as numerous experiments made by Dr. Pearson and others, as well as by myself, prove; although there are some exceptions, which may be found in this treatise, and elsewhere. One is mentioned by Dr. de Salis, in his letter to Dr. Pearson.

The Rev. Mr. Smith, of Wendover, informed Dr. Pearson, that Mr. Henderson, a surgeon of that parish, *three times* inoculated a lad, who had previously been infected with the small-pox, and could only excite

inflammation on the arm, without any pustulous appearance. The same thing occurred to Mr. Grey, a surgeon of Buckingham, who says, the disorder is common among the milkers in his neighbourhood.

Mr. Giffard, surgeon of Gillingham, near Shaftesbury, says, in his letter to Dr. Pearson, that last winter he inoculated three parishes; and some of the subjects told him they had had the Cow-pox, and should not take the small-pox. He desired, however, to inoculate them, and did so, *two or three times*, but without effect.—He adds, “*Persons never take the small-pox, after they have had the Cow-pox.*”

Several cases are detailed by Dr. Pearson, tending to confirm Dr. Jenner’s opinion, that the Cow-pox is a certain prophylactic for the small-pox; some of the persons enumerated having been *inoculated with variolous matter, and afterwards living with their children when labouring under the small-pox, yet escaping all infection.*

Messrs. Carpenter, booksellers, in Old Bond street, inform me, that when they were inoculated, many years ago, in Gloucestershire, some farmers’ sons who were inoculated at the same time, proved insusceptible of infection; and the reason they assigned for this insusceptibility was, that they had had the Cow-pox.

Were I to give a detail of all the evidence that

has been offered to me in confirmation of this fact, I should fill a volume; but this is rendered totally unnecessary. Exclusive of all the other evidence which has been adduced, in the foregoing pages, that of professor Wall alone, in his letter to Dr. Pearson, will be sufficient to convince those who are not prejudiced. It is to the following purport: in consequence of enquiries he had made, he was informed, *that those who have had the Cow-pox, have never been known to have the small-pox.*

As additional proofs of the permanency of the antivariolous effect of the Cow-pox, one of the men belonging to Mr. Willan's farm, who had had that disease six years before, was inoculated by Mr. Lucas, in the presence of Doctor's Pearson and Woodville, with a larger quantity of variolous matter than usual, taken from a person who was also present; but without effect.—A week after this, he was again inoculated by Mr. Wacksel, at the Small-pox Hospital; and, as before, with matter immediately taken from a patient labouring under the small-pox; but to no purpose.

Another man belonging to the same farm, who had also had the Cow-pox six years before, was twice inoculated in both arms, by Mr. Wacksel, at the Small-pox Hospital, with matter immediately taken from patients labouring under the small-pox; but all in vain.

Another servant of Mr. Willan, who had had the Cow-pox ten years before, was also twice inoculated by Mr. Wacksel, with recent variolous matter; but with no better success. All attempts to excite the small-pox were fruitless.

The children of these three men were soon afterwards inoculated; and though they all lived in the same apartments with their children, during the time they laboured under the small-pox, yet they all escaped infection.

Mr. Downe informed Dr. Pearson, that a gentleman near Bridport, being at a farm-house where the Cow-pox prevailed, was persuaded to submit to vaccine inoculation, as the means of preserving him from the small-pox. He was afterwards inoculated twice by Mr. Downe's grandfather; and, *a considerable time after*, twice by his father; but without effect. The small-pox has since been repeatedly in his own family; but he never avoided it, being confident that he was insusceptible of that disease.

The answer of Dr. Wall to Dr. Pearson, dated from Oxford, proves that the Cow-pox is known in that part of the kingdom. Besides, the general evidence communicated by this learned professor, the following particular anecdotes deserve attention.

“A servant who had kept the cows of a considerable dairy farm in this neighbourhood a great many

years, told me that he had the Cow-pox *early in life*: yet about six or seven years ago, he wished, for security, to be inoculated for the small-pox. The operation was performed *three several times*; but no disorder or eruption ensued. The surgeon, a gentleman of great eminence in this place, asked him if he had ever had the Cow-pox. Upon his answering, yes, the surgeon replied, Then it is useless to make any further trial.

“ This servant, the next year, had several children inoculated by Sutton. *He was with them all the time till their recovery; but did not receive the infection.*

“ A servant-girl at another considerable farm, told me she had the Cow-pox *early in life*. Several years after, she was inoculated; but *nothing took place*, except the appearance of a *red blush* round the incision; similar, I suppose, to what Dr. Jenner mentions.

“ This red suffusion has been hastily, by some inoculators, regarded as a proof, that the system has been infected with the virus of the small-pox. But neither this appearance, nor even a much more considerable affection of the arm, is always a sufficient security against future infection, unless there has been some eruption.—See *Memoirs of the Medical Society.*”

The testimony of another medical man, who is

also high in the public estimation, is brought forward by Dr. Pearson. Dr. Croft informed him, "that in Staffordshire, to his knowledge, the fact has been long known, of the Cow-pox, which prevails in that county, affording an exemption of the human subject from the small-pox."—This gentleman, Dr. Pearson observes, gave him an unequivocal proof of his conviction of the safety and efficacy of the inoculated Cow-pox, by his application to him for matter; in order to inoculate one of his own children.

In the Medical and Physical Journal for 1799, we meet with a letter from Dr. Croft to Mr. Trye of Gloucester; which, at the same time that it communicates to the public the favourable result of the vaccine inoculation in the case of Dr. Croft's child, displays a striking instance of the misrepresentations which have gone abroad on this subject.—It is as follows:

"DEAR SIR,

"Hearing it is reported at Gloucester, that I have lost a child of my own, under inoculation for the Cow-pox, I am convinced it will afford you pleasure to know, that the only one of my children which was inoculated for the Cow-pox, went through the disease in the most desirable manner, and has ever since been in perfect health.

"About thirty children, inoculated from his arm, had the disease equally well, and without any sub-

sequent illness; and I do not believe, that the whole number of children, who were most of them inoculated by Mr. Knight, surgeon to the Duke of York, *had so much as one hour of indisposition, or a single pustule, except on the arm.*

“ I trouble you with this, for the purpose of preventing any misrepresentation, that might tend to lessen the value of Dr. Jenner’s observations upon this important subject.

I am, &c.

RICHARD CROFT.

“ Old Burlington-street.”

Mr. Howard informed Dr. Pearson, he had been assured on very good authority, that of a relation who is an officer in the Oxfordshire militia, it is a received opinion among the soldiers, that it is unnecessary to be inoculated for the small-pox, if they have already laboured under the Cow-pox, as many of them have done.

Dr. Pearson was informed by Dr. Redfearn, of Lynn, in Norfolk, that the Cow-pox is a common disease among the cattle in that part; and from the success which he himself had met with, in discovering the disease, by making a strict inquiry in farms, where it was believed not to exist, he scarcely entertains a doubt, that it breaks out occasionally in every part, where a number of cows are kept; and that the infection is widely disseminated.

Mr. Rolph, surgeon, of Peckham, communicated to Dr. Pearson the following information. Many scores of persons who had undergone the Cow-pox, had been inoculated by himself and his late partner, Mr. Groves, of Thornbury; but they all proved insusceptible of the small-pox, either by inoculation, or by effluvia, notwithstanding *many of them were repeatedly inoculated, and almost all of them associated with persons labouring under the small-pox.*

Mr. Fewster, surgeon, of Thornbury, was many years in partnership with the same Mr. Grove, a very great inoculator. This gentleman also confirms the opinion, that those who have had the Cow-pox are insusceptible of the small-pox.

Mr. Fewster, in his letter to Dr. Pearson, says, "*I do not see any great advantage from inoculation for the Cow-pox.*" I have known other great inoculators for the *small-pox*, who could not see *any great advantage* from the *Cow-pox*. To *them* certainly it promises *no great advantage*; and they may be excused for being rather partial to their *old friend*. To the medical profession it will prove *no advantage*; but it will prove an immense advantage to the public, and an inestimable blessing to mankind.

Mr. Bird, of Hereford, informed Dr. Pearson that one person had the Cow-pox three times; and the last attack was the most severe of all; but in general it is the reverse.

Mr. Wales, surgeon, of Downham, in Norfolk, transmitted the following information to Dr. Pearson. He found, on inquiry, that many persons in his neighbourhood, who had been affected with the Cow-pox, were *unable to take the small-pox*, either naturally, or by inoculation, although *repeatedly* performed.

Dr. Fowler, of Salisbury, informed Dr. Pearson, that the Cow-pox was understood by some farmers in that neighbourhood to be a preservative from the small-pox. He mentions two instances, which are worth recording; as they serve to shew the great efficacy of the vaccine virus.—Some milk from diseased cows having spirted on the cheek of one woman, and on the breast of another, produced the disease; another caught it in the usual way. Neither of these had undergone the small-pox; nor have they since been infected by it, although they have been much exposed to its contagion. The person who had the Cow-pox from the milk sprinkled on her face, has since been inoculated three times for the small-pox, but to no purpose.

I cannot help suspecting, from two of the foregoing cases, and some others which I have heard of, that infection may sometimes take place from Cow-pock matter, where there has been no abrasion of the cuticle. It may not be amiss, in this place, to suggest, that those who live, or are likely to live, in dairies, ought to undergo vaccine inoculation, in or-

der to season them for their future employment, and preserve them from the greater virulence of the casual disease. Even when the happy period shall arrive, that the small-pox shall be utterly exterminated from the face of the earth, this precaution may still be of some importance.

Dr. Pearson acknowledges a letter which was just sent to him. This letter was addressed from Mr. Hughes, of Stroudwater, Gloucestershire, to Mr. Bliss, surgeon, of Hampstead. It came too late for publication; but we are told by Dr. Pearson, that “it especially confirms, by a number of instances, the facts of the safety of the Cow-pox, and of its producing unsusceptibility of the small-pox.”

Dr. Pearson's remarks are concluded with the following encomium on Dr. Jenner: that, if hereafter, by the practice of universal inoculation, the human animal should be a much more abundant, and better-known source of the morbid matter, than the brute animal, the name of Dr. Jenner, who will be so great a PUBLIC BENEFACTOR, ought to live in the grateful memory of mankind.

It is but justice to Dr. Jenner, to assert his claim to this title;—the highest that mankind can bestow — He has proclaimed this benefit to the world; and pointed out the means by which it may be rendered perpetual, and universal. Let us hope, that the world

will for once be just, and shew a due sense of gratitude to a living benefactor.—Let us hope, that an enlightened age will rank him with those,

qui Phœbo digna locuti,
 Inventas aut qui vitam excoluere per artes,
 Quique sui memores alios fecere merendo.

The Medical Journal, the first number of which was published in March, 1799, commenced its auspicious career with an account of the publications and experiments on the Cow-pox, by Dr. Bradley, one of the editors of that work.

After some preliminary remarks, Dr. Bradley justly observes, that the small pox is a most formidable disease; and although the practice of inoculation has reduced the number of its victims, instances frequently occur, where it still proves formidable.

Besides other injuries to be dreaded from the small-pox, he mentions one which is of the utmost importance; namely, that, even when mild, it often calls the latent seeds of struma into action. This every experienced practitioner must confirm.

“ If therefore,” says he, “ any means could be discovered, of superseding it, without incurring equal danger, it might naturally be expected, that many parents would be desirous of taking advantage of them. This appeared to be the case, in a very unequivocal manner, on the first publication of Dr.

Jenner's work on the Cow-pox, in June, 1798; for not only many persons of distinction, but several medical men who rank high in the profession, immediately discovered an earnest desire, to have their children inoculated with the Cow-pox matter as soon as possible; from the evidence of safety and efficacy in preventing the small-pox, which was contained in Dr. Jenner's book alone."

Such was the high expectation of the advantages likely to result from the new practice, when it was first announced to the world. But, from causes which are sufficiently explained in the course of this treatise, the prospect was soon clouded over; and the brightest sun that ever rose, to illumine the realms of science, for a while suffered almost a total eclipse.

The fluctuation of popular opinion, on the subject of the vaccine disease, and the exultation of its opponents, on any *seeming* failure attending it, evince the perfect ignorance of its opponents; and proves that they neither understand the general rules of the practice, nor their exceptions. Had they read the works of Jenner, they would know, that in every essential point, he still remains unrefuted.

Ille,—velut rupes, vastum quæ prodit in æquor,
Obvia ventorum furiis, expostaque ponto,
Vim cunctam atque minas perfert cœlique marisque,
Ipsa immota manens.

After the preliminary observations before alluded to, Dr. Bradley presents his readers with an account

of the publications of Dr. Jenner and Dr. Pearson. This account is drawn up in a very able manner. He subjoins a brief history of the subject, down to the time when he published his remarks. By this it appears, that about the latter end of December, 1798, the Cow-pox broke out among the herds of several milk-farms, in the environs of London. The disease spread rapidly, so that at one farm, in the second and third weeks of January, more than 200 out of 850 cows were affected, or had passed through the disorder.

At another farm, between 60 and 70 cows out of about 350, had the disease. This epizootic contagion disappeared rapidly, after that time; for, by the 4th of February, not a single cow could be found in such a state, as to afford matter for inoculation.

Dr. Bradley adds, “ The Cow-pox, in this instance, appears to have been very mild; for *no loss was experienced by the farmers from the deficiency of milk, as usually happens.*”

Is it not surprising, that *no loss* was sustained by the farmers, in consequence of alarms occasioned by *bestial humours*? Where slept those tender guardians of the public health, who are at other times so fearful, lest the human body should be defiled with the fluids of a beast? They must from this time forswear the use of milk; otherwise it may be suspected, that they strain at a gnat, and swallow a camel.

According to the statement of Dr. Bradley, vaccine inoculation in the metropolis, at its first commencement, was extremely successful. Subsequent accounts, however, were not equally favourable; and were so far from corresponding with the first report, that they tended rather to damp the ardour of those who were before engaged in the practice, and to deter others from following their example.

Many other periodical publications have been made the vehicles of information on this subject: but none have distinguished themselves more than the Medical and Physical Journal, and the London Medical Review and Magazine. These two publications are conducted in so able a manner, and contain such an early and accurate account of the various improvements in the healing art, that they are, or ought to be, in the hands of every member of the medical profession.

In the Medical Review and Magazine for April, 1799, an account of Dr. Jenner's first publication is given; to this account the editors prefix the following remarks.

“ It is rather surprising, that the disease which forms the subject of this work, should not have earlier attracted the notice of medical men. It appears to have been long known in the western countries; and has been observed by many of their inhabitants, to possess the peculiar property that has

induced Dr. Jenner to institute those inquiries, the result of which is laid before the public in the following statement."

This is a reflection that has often been made, on this and other similar occasions, such as the discovery of the circulation of the blood. It seems, however, to have been the design of Providence,

Ut varias usus meditando extunderet artes
Paulatim.

The popular prepossession in favour of the inherent virtue of the vaccine virus, although it did not immediately lead to its introduction into practice, now affords a powerful argument in favour of that practice; and in favour of the opinion, that its effect is permanent. But, perhaps, it was not necessary to adduce even this argument, in order to disprove the hypothesis of its effect being only of a temporary nature;—an hypothesis totally repugnant to analogy, and common-sense.

In the Medical and Physical Journal for the same month, is a case of the Cow-pox, together with a plate annexed, engraved by Mr. Walker. This ingenious artist has there represented the vaccine pustules, in their different stages, as they appeared on the arm of his own child.

In the next number, the editors express themselves in the following manner:

“ As we had wished to lay before the public an impartial, unadorned case of Cow-pox, just as it might impress an anxious and attentive parent, and just as described by him, from notes made during its daily progress ; we think ourselves peculiarly happy, in having all the desiderata united in one individual instance. The plain and simple description, and relation, of a person unconnected with the profession of medicine, must be far more satisfactory to the public, than any case selected for the occasion by a practitioner, who might wish to recommend the new disease.”

It is but justice to the new practice to remark, that the plates in the work alluded to, have given some persons a more formidable idea of the appearance of the disease, than it really deserves. This is partly owing to their not discovering, that in the first plate, the casual, and not the inoculated disease, is represented ; and partly to Mr. Walker's child, who is the subject of the second plate, having been inoculated with *two incisions* in one arm. The pustules produced by the two incisions became confluent ; and put on a far more hideous appearance, than that which is occasioned by a *single puncture*. The three secondary pustules render it probable, that a little of the *old leaven* was blended, by some accidental means, with the vaccine matter employed on this occasion.

For a detail of the particulars of this case, I must refer my readers to the Journal itself ; but it cannot

fail to gladden the heart of every tender parent, anxious for the welfare of a beloved offspring, to peruse the following paragraph, with which Mr. Walker concludes the history of this case.

“ During the whole time, the child never exhibited any particular symptoms of indisposition; and had so little fever, that it was hardly, if at all, perceptible. He seemed, however, by the motion of his arm, to be sensible of a soreness under it; but neither that, nor the eruption, affected him so much, as to render him cross or peevish, though he cut three teeth during the progress of the disorder. He went entirely alone, before he was eleven months and a half old.”

The editors of the Journal add a note on this case; in which they observe with great reason, that they consider the preceding communication, on so interesting a subject, as peculiarly valuable: since Mr. Walker not only shews a mind sufficiently enlightened, to give a fair trial to a new method of conquering one of the most dreadful scourges of mankind; but, from his professional abilities, also enables them to exhibit the progressive appearances of the Cow-pox,

A considerable part of the communications concerning the early practice of vaccine inoculation, I shall here pass by. It has been, in some measure, anticipated in the foregoing pages. It must there appear evident, to every one who is conversant with

the mild disease in question, that all the severe cases were cases of the small-pox; which may well cry out on this occasion,—

O medici ! mea fraus omnis ; nihil iste nec ausus,
Nec potuit.

In the Medical Review for August, 1800, are some observations by Mr. Blair, introductory to his reflections on caustic bougies, which are equally applicable to any other improvement in practice, that may at any time be proposed. They speak the language of true philosophy; and are the fruits of a well-cultivated understanding and profound reflection. Gentlemen who talk of the *cowmania*, and those who call this enlightened age *an age of insane projects and poisonous experiments*, will do well to read them. I am persuaded every true friend of science will thank me, for inserting them in this place.

“ It has been often remarked in surgery, and in other practical professions, that attempts at improvement are considered by timid persons as hasty and unwarranted innovations. This caution, when properly limited and applied, may answer a good purpose; by inducing men qualified for the task, to examine with accuracy and deliberation into the improvements proposed; and prevent the obtrusion of those which will not bear the test of rigid inquiry. For a man to condemn or approve hastily, without a previous knowledge of the subject, nothing else is required than a common stock of prejudice: but to

form a correct and independent opinion, sometimes calls for more judgment and firmness than many possess; and to appreciate the treatment recommended for an intricate disease, demands greater opportunities and skill, than fall to the lot of every practitioner."

In the Medical Journal for May, 1799, Dr. John Sims, after a very able vindication of his conduct, in publishing a case of supposed Cow-pox, which appeared to militate against the opinion of Dr. Jenner; expressed a suspicion, that variolous matter had been inserted, for want of due care, and produced a different disease from that which was intended.

In the Medical Review for June, 1799, is a note from Dr. Woodville, stating, that in consequence of greater caution being used in the choice of matter, by employing only such as was taken from patients in whom the Cow-pox was well characterised, the practice of vaccine inoculation was then become much more successful. Instead of sixty in a hundred, as had been the case in his first report, only seven in a hundred and ten, at this time, had pustules. No stronger argument can be urged, to prove that these patients had the small-pox.

In the Medical Journal for the same month, the second part of Dr. Jenner's immortal work is reviewed. On this occasion, the editors of that work express their sentiments in the following manner.—

“ There is not, perhaps, in the annals of medicine, to be found, an example of an experiment, or inquiry, where the life and health of such numbers already born, and of all to be born, were implicated, that has been *taken up more generally, received more candidly, or conducted more prudently*, than this concerning the Cow-pox.”

It is fortunate for many, that those persons are not to be anathematised, who will not subscribe to all the articles of this faith. It must be recollected that the foregoing observations were written, at a time when the reports concerning vaccine inoculation were most unfavourable; and in the very number wherein a pamphlet is reviewed, in which the most unfavourable of all the reports, concerning this practice is recorded.

The reports contained in the preceding numbers of that, and the other periodical publication before alluded to, (both of which, for their general merits, are truly respectable), had spread a gloom over the medical horizon, which even now, after a long series of almost uninterrupted success, is scarcely dispelled.

Thinking as I do on this subject, I should be guilty of gross adulation, were I to pay a compliment to the *prudence* with which the experiments in vaccine inoculation have been conducted; and it

would be a dereliction of duty, not to express my dissent, in the most decided manner, in this place.

It was not prudent to mingle animal poisons, in order to determine whether it is possible to produce a mongrel disease. It was not prudent, to expose patients who had not undergone the Cow-pox, to the infection of the small-pox, the very disease which we wished to avoid.

In the Medical Review for July 1799, is a communication from Dr. Hooper, giving an account of a case, where a person who was supposed to have had the Cow-pox, caught the small-pox. Dr. Hooper was the more inclined to believe that the disease this man had was the genuine Cow-pox, because he resisted the infection of the small-pox many years; and his brother, who had the Cow-pox with him, still resists it. But when we read that they had eruptions in *different parts of their bodies*, we are justified in suspecting, that they were cases of a *spurious* Cow-pox.

These cases, and others published by Dr. John Sims and Dr. Barry in the Medical Journal, appear to me to be the *spurious* Cow-pox: and, taken collectively, render it probable, that this distemper is an *imperfect preventive* of the small-pox.

In the same work for August, are some remarks on the Cow-pox, by Dr. Pearson. An opinion is there given, that in the inoculated small-pox, one in

200 dies. I have often known an estimate made, that one in a hundred dies in inoculation of the small-pox. I have not the least doubt, that the fatality of the inoculated small-pox is so great in London; and believe it is still greater. Exclusive of confined situations and bad air, the frequent necessity of inoculating children during the period of dentition, contributes to this mortality.

From the general result of his own practice, and that of others, Dr. Pearson thinks we may safely conclude, that the Cow-pox is attended with advantages, sufficient to force its way speedily into general practice; and that it will supersede, and ultimately extinguish, the small-pox.

After alluding to the inattention of mankind, on account of their not applying in practice a fact, by which a loathsome and formidable disease may be extinguished;—Dr. Pearson observes, that if he were to name a parallel instance of inattention, “it should be the neglect of inoculation for the small-pox, till it was introduced into England from Constantinople; although it had been practised from time immemorial, in the Barrozzo mountains, on the frontiers of Galicia, in the same rude manner as it is at this day.” This circumstance is said to be mentioned by Jacobus a Castro de Sarmiento. The same practice prevailed in this kingdom, previous to the introduction of inoculation into England from Constantinople; of which I published some account several years ago; in the

London Medical Journal. This account was taken from the Philosophical Transactions.

In the same number of the Medical Review, are some observations on Dr. Hooper's case, by the Rev. Mr. Fosbrooke; in which Mr. Fosbrooke contends, that the disease described by Dr. Hooper was the *spurious* Cow-pox: which those who have perused the publications of Dr. Jenner can scarcely doubt. He also contends, that the idea of the insusceptibility of the system to receive the small-pox twice, is modern; and cites a number of instances that are on record, to prove the contrary.

In the Medical Journal for September, are several cases published by Mr. Ward, of Manchester, in which the Cow-pox had but little share. They must have been the product of mixed matter. Several of the cases ought rather to be called cases of small-pox, than of Cow-pox. I some time ago sent vaccine virus to the same place; which has produced the genuine disease.

From whom Mr. Ward received the matter which produced this spurious issue, I know not; but have no doubt that it sprung from a double source. Whether the baneful contagion, in these and other instances, first became blended with the vaccine virus, through the medium of a variolated atmosphere, or of a lancet, it was so frequently blended, that we cannot wonder at the frequent occurrence of severe

cases, while that practice prevailed; or at reading of one unfortunate catastrophe from that cause.

From this unnatural union of the human virus with that of the bovine race, the story of the Minotaur seems realized; and the monstrous birth no longer appears an idle fiction.—To explore the nature and effects of compound morbid poisons, would be a perilous, and perhaps a vain labour. It is a subject, “puzzl’d with mazes, and perplex’d with errors.”—Even to enter upon the subject, is to enter the Cretan labyrinth without a clue.

With all due deference to those practitioners, who either proposed or instituted experiments of this kind, before the full effects of the pure vaccine virus were well ascertained, and the practice established on a firm foundation,—I beg leave to say, that *such a rage of experiment, and such preposterous attempts*, had nearly blasted the practice in its bloom.

After so many severe cases have been occasioned, and so many serious warnings have been given, I trust no medical man will be so rash, as to blend animal poisons. But should any one venture to try the hazardous experiment, I hope he will try it on himself:

—————Nam lex non æquior ulla est,
Quam necis artifices arte perire suâ.

The account of Mr. Evans’s practice, which is published in the Medical Journal for November,

1799, proves that pustulous eruptions, in a considerable proportion of cases, took place in other parts besides the metropolis. But we have no proof, that all the matter used by that gentleman was not originally derived from a tainted source; nor have we any proof, that the Cow-pox patients did not catch the small-pox from the small-pox patients, with whom they associated, and with whom several of them slept. We have, however, the satisfaction to find, that "the Cow-pox patients had the disease, in every instance, less severely than those inoculated with the small-pox; although it was communicated at the same time, in the same family."

Mr. Evans observed, that those few patients whose arms were most inflamed, were those who were inoculated while a cold north-east wind prevailed. But, lest any one who tries to depreciate this practice should exult, he informs us, that an eminent surgeon in the same part of the kingdom, who was employed in inoculating the children of several respectable families with the *small-pox*, was obliged to postpone his practice for a month, on account of the great number of sore arms with which his patients were afflicted. Mr. Evans adds, that after the weather became milder, none of his own patients gave him any trouble.

It may be useful to remark in this place, that either heat or cold, when excessive, is capable of aggravating the local, and consequently, in some measure,

the constitutional symptoms. This is an argument for preferring temperate weather for inoculation, in places where there is no immediate danger of the small-pox; but wherever a person is likely to be exposed to that contagion, provided proper precautions are observed, the circumstance is too trivial to merit the least regard.

In the Medical Journal for December, 1799, is a communication on this subject, of no common importance. It contains an account of the practice of the Rev. Mr. Holt, who, by his exertions in the cause of humanity, displays a bright example to those divines, whose parishioners are unable to procure medical assistance.

In order to do justice to the talents and virtues of this truly respectable divine, and his ardent zeal to promote the welfare and happiness of mankind, I shall insert his valuable communication at full length, together with the just encomium on his character by Mr. Abernethy, with which it is introduced.

To the Editors of the Medical and Physical Journal.

“ GENTLEMEN,

“ IN the as yet undetermined state of the public mind, respecting the utility of inoculating with the infection of the Cow-pox, you, and some other of my medical friends, thought that the inclosed narrative deserved publication; I therefore

send it for insertion in your Journal. It is written by the Rev. Mr. Holt, rector of Fimmere, near Buckingham, a gentleman whose character is highly estimable for benevolence, learning, and love of science. There is no medical practitioner in his parish; and the poor are, therefore, in some degree, precluded from the beneficial effects of variolous inoculation. In conversing with Mr. Holt, last summer, on the subject of the Cow-pox, the favourable report which I made of its effects from my own small experience and observations, induced him, as he takes a kind of parental interest in the sufferings and welfare of his parishioners, to inoculate some of them with this infection. The result of the experiment, and all circumstances relating to it, are explained in the inclosed letter.

“ I remain, Gentlemen,

“ Your most obedient Servant,

“ Bedford-Row,

Nov. 9, 1799.

“ JOHN ABERNETHY.”

“ DEAR SIR,

“ IT gives me great pleasure that I am enabled to perform my promise of sending you an account of my success in inoculating for the Cow-pox. The novelty of the experiment made me apprehensive that my parishioners would not readily submit to an operation which they might consider dangerous in its consequences, and doubtful in its effects; but these fears were soon removed, as I

found them all impressed with the belief, that the Cow-pox caught in the natural way were a certain preventive of the small-pox. This induced me to inquire into the grounds of this opinion; and I was soon furnished with a variety of names and cases; which, though probably authentic, I rejected; as some lived at too great a distance from me, and others had happened many years ago: and I determined to rely only on those instances in which I could ascertain the facts from the persons themselves; a list of whom I shall subjoin.

“ My first essay in inoculation was made upon Elizabeth Smith, aged about 25, whom I inoculated in both arms, to insure as much as possible the probability of infection. On the sixth day she complained of head-ach, and pain in the axillæ; the former was removed by a dose of salts the following morning, the latter continued several days: she had *no pustules*, except where I made the incisions; and their appearance and progress were exactly similar to the description and beautiful plate given by Dr. Jenner. She had no indisposition of consequence enough to prevent her performing her usual work with ease; and on the thirteenth day the pustules became dry, and peeled off. I have since inoculated upwards of 300; and, as I adopted Dr. Woodville's excellent method, of stating when and from whom each person was inoculated, I was enabled to trace varieties up to their source. But, excepting four instances, my cases were all like each other, viz. pain in the axillæ.

the seventh or eighth day; slight head-ach, sometimes attended with feverish shiverings, which invariably yielded to a dose of salts the day after; except in the case of Thomas Sheen, a baker, who was obliged to desist from his usual occupation for three days, in consequence of the pain and inflammation of his arm, which possibly might be increased by the heat to which he was so much exposed, as his is the only case in which the patient was prevented following his business as usual. One dose of salts, taken the morning after they complained of pain, was the only medicine which they had. The varieties which occurred were, Thomas Williams, aged seven years, who had a small pustule, about two inches from the incision, resembling one of the plates in Dr. Jenner's publication. William Neil, aged 10 years, and Hannah Beal, aged six years, had each above *one hundred* pustules in different parts of their bodies, which assumed precisely the appearance of that given by inoculation, except that they were smaller: no complaint of more than ordinary indisposition was made in either case. In order to ascertain whether there was any peculiar malignancy in the matter of these pustules, I inoculated eight children from them; but they all had the complaint in its mildest form, having neither any pustules, nor any indisposition more than the rest. My patients were of all ages, from seven weeks to sixty years; nor did diseased habits of body, or pregnancy, lessen the mildness of the infection. One circumstance occurred, which, perhaps, is too trivial

to be mentioned: I inoculated near 30, twice or thrice, apparently without effect, allowing an interval of five or six days; but though they sickened from the last incision, a pustule regularly appeared wherever I had formerly inoculated them, as if the dormant matter had been roused by the activity of that last inserted. At the expiration of three weeks, I inoculated six of my parishioners with variolous matter. On the third day I was not a little alarmed by a considerable degree of inflammation which appeared in all their arms, and which seemed to indicate the certainty of their having the small-pox; but in two or three days the whole disappeared, without any pustule being formed. It is my intention to inoculate others, as often as I can conveniently procure variolous matter; and by the kindness of Mr. Gray, an eminent surgeon and apothecary in Buckingham, I am promised some in a short time, the result of which you shall be informed of. Mr. Gray, whose zeal for his profession is only equalled by his ability, has also allowed me to state his following case, which he had at Boreton, in Buckinghamshire:—A farmer and his sons, who had had the small-pox, did not receive any injury from milking the cows, though their teats were extremely ulcerated at the time; but a servant, who had not had the small-pox, caught from them the Cow-pox, and was so dangerously ill, that medical help was necessary for more than three weeks; and the effluvia from him was so very offensive, that every room in the house was strongly

tainted with it. Notwithstanding this, none of his friends and acquaintance caught the infection, though they had had neither complaint. It would seem, then, that the advantages of the small and Cow-pox are reciprocal ; and that the effluvia of pure Cow-pox matter is probably not infectious, even in its worst state.

“ I will now add the cases which I mentioned above, in which the Cow-pox seem to have prevented variolous infection.

“ In the year 1785, Benjamin Cowley, aged 26, when servant to Mrs. Hodgekinson, of the New-inn, near Stowe, had the Cow-pox. About three years after, he entered into the Oxfordshire militia, in which he remained five years ; during this time he was three times inoculated by the surgeon of the regiment, without effect.

“ Richard Smith, aged 24, had the Cow-pox at the same time and place : he has not since been inoculated ; but his large family have at different times since had the small-pox, and he has not caught the infection.

“ Edward Stockley, aged 20, had the Cow-pox when young : he was inoculated several times, about two years ago, for the small-pox, in this parish ; but without effect.

“ A servant of Mr. Morris, of Water-Stratford, had the Cow-pox several years ago: he has been inoculated seventeen times since for the small-pox, but without effect.

“ Mrs. Malins had the Cow-pox when young: she afterwards married; and her daughter had the small-pox so dreadfully in the natural way, that the mother tried to prevent her going blind, by moistening the corner of her eyes with saliva. In consequence of which, Mrs. Malins had one large pustule upon her lip, occasioned by wetting her finger and applying it to the child, and two small ones upon her arm, upon which the child lay; but she had no indisposition, and seems only to have experienced what nurses do in hospitals.

“ You may depend upon the authenticity of the above cases; and I could send you more, had I opportunity and leisure to go to the parties themselves.

“ My parishioners are fully sensible of their obligations to you, for enabling me to introduce this complaint among them; as the small-pox are so much dreaded in this neighbourhood, that all intercourse with the surrounding parishes is interrupted, when any one is infected with them; and I am convinced that the resident parochial clergy could not render a more essential service to the temporal interests of

their flock, than by devoting a few days to this inoculation, which is attended with little trouble, and no expence.

“ I am, Sir,

“ Your affectionate

“ Finmere,

“ And very faithful friend,

Nov. 6, 1799.

“ ROBERT HOLT.”

In the same Journal for March, is an account of forty-three cases of Cow-pox, by Mr. Stewart, of Plymouth: in which the disease is stated to have been much milder than the most favourable cases of small-pox. Mr. Stewart condescends to notice the opposition and crafty insinuations of interested persons. Wherever the friends of this practice have thought it worth while to inquire concerning the fabricators of false reports, they have generally found, that they originated with some *obscure medical practitioner*, or some *jealous rival*.

In the same number is a letter from Dr. Huggan on this subject; who introduces his observations in the following manner.

“ The introduction of the Cow-pox into practice, as a substitute for the small-pox, having been found to be expedient, in the most extensive sense of the word, the discussion of the subject will, of course, be considered as closed. This is a circumstance truly honourable to Dr. Jenner; by whom this beneficial

improvement, doubtless one of the most important in medicine, has been first made known to the world.

“Exegit monumentum ære perennius.”

To the last sentiment I sincerely subscribe; not so to the preceding. The full extent of the benefits of this practice is not yet known to the world; therefore the discussion of the subject *ought not* to be closed. The practice still meets with opposition; therefore the discussion of the subject *cannot* be closed.

Dr. Huggan remarks, that the new practice has been opposed by professional men, in some places, with a degree of acrimony very unbecoming the medical character. But he thinks there is no great reason to fear, that the public confidence will be shaken by the misrepresentations of those who are interested in opposing its progress; or by the feeble efforts of ignorance and presumption.

Alas! public opinion is a reed, that is shaken by every breath; it is as inconstant as the wind, and as unstable as the waves. In short, nothing can be more remarkable for instability, than the public mind;

———— volucris quem concita gyro,

Aura levis torquet, vacuo ludibria cœlo.

It is no wonder the public should be sometimes imposed on by men, of whose professional abilities,

it is universally allowed, they cannot be competent judges. It is no wonder they should be imposed on by men, who belong to a profession, in which arrogance is a substitute for merit, and ostentation for success. Hence it is a profession, which, above all others, abounds with the characters whom Dr. Huggan so empathically describes,—“*reptiles that plant themselves in the high road of improvement, and try to hiss back all that would advance.*”

Dr. Huggan is of opinion, that no medical man of candour, or professional information, will attempt to resist the force of so great and incontrovertible a mass of evidence, of the utility of the new practice; or the high authority, on which it has been so strongly recommended. He acknowledges, that he himself was at one time inclined to doubt of its expediency; from the perusal of an anonymous letter in the *Annals of Medicine*. This letter is said to have been written by an *eminent practitioner in England*; and when we recollect the various modes by which a man may become *eminent* in the medical profession, we must confess this is by no means improbable.

This *eminent practitioner in England*, at the very time when it was notorious, that a most extensive enquiry was instituted, in order to ascertain the truth of Dr. Jenner's doctrine, was so grossly ignorant as to assert, that Dr. Jenner's opinion seemed to be gaining ground, without any person's having taken the

trouble of enquiring into the facts, upon which that opinion was founded.

Dr. Huggan was not undeceived, till he read Dr. Trotter's *Medicina Nautica*, in which the learned and benevolent author "has inserted Dr. Pearson's Corollaries on the Cow-pox, seemingly with the view of recommending the introduction of it into the navy; in addition to the other improvements that have been made, in that important of the public service, since his appointment of Physician of the fleet." Induced by so great an authority, he readily embraced the first opportunity, of trying the new practice.

In the *Medical Journal* for June, 1800, Dr. Trotter observes, that from the animated and extensive discussion, which the subject of inoculation of the vaccine disease had undergone, in the past numbers of that work, it appears, that in many instances, the first, and often succeeding attempts, had failed to produce infection. This failure, Dr. Trotter remarks, is the more to be lamented, on account of the patient being thereby still exposed to variolous contagion.

To prevent similar disappointments, as far as possible, in future, Dr. Trotter recommends a method, which he formerly found successful in ensuring variolous infection, when his practice lay much that way. First, the arm of the patient was *well bathed* with warm milk and water; then wiped with a *rough* towel, so

as to excite a temporary inflammation, by which the susceptibility of the part was increased, previous to the puncture.

We are then informed by Dr. Trotter, that the Jennerian inoculation had at that time been introduced into the neighbourhood of Plymouth by Dr. Huggan; and earnestly supported by all the scientific part of the medical profession. Such a testimony cannot fail to animate all those who are friends to the practice; and encourage them to redouble their exertions.

Of a contrary tendency is the following extract from the Monthly Review for July; taken from the Critique on Dr. Trotter's *Medicina Nautica*, the work before alluded to, which convinced Dr. Huggan of the error into which he had been led.

“ After having treated of the small-pox, which may become a dangerous epidemic on board our fleet, *according to the author's representation*, he proposes, (from the reports published by Dr. Pearson), the inoculation of our seamen for the Cow-pox. This is *one of Dr. Trotter's notions*, which has been *hastily adopted*; and which is not recommended by his own experience. A plan of general inoculation for the *small-pox* would be preferable *at this time*; for our brave seamen ought not to be among *the first subjects of experiment.*”

Surely this rash and undeserved censure could never emanate from one of the usual writers of the Monthly Review. It is probably the production of some person, who has an interest in the life of that scourge of the human species, the small-pox.

If Dr. Trotter thinks the small-pox may become a dangerous epidemic on board the fleet, he is not altogether singular in that opinion. The condition of a seaman, living on salt provisions, indulging himself in copious libations of grog, not always having the most skilful practitioners to prescribe for him, or the most careful nurses to attend him, slung in a hammock, in a close and crowded ship, is not such, as to "disarm the small-pox of all its terrors."

That the small-pox may become a dangerous epidemic by sea or land, is not *one of Dr. Trotter's notions* that has been *hastily adopted*; it is the result of general observation, and experience. What the author of the criticism can discern in *the present time*, that renders a general inoculation of the *small-pox* preferable, it is not easy to conjecture. A considerable number of eminent physicians and surgeons have assured the public, that the Cow-pox is a much milder and safer disease; and in their opinion, a perfect security against the infection of that disease. After this, what excuse can be offered, for inoculating that disease in any place, but more especially in the fleet? The deadly poison, when once disseminated in such

a manner, might extend its ravages over the whole face of the globe.

The small-pox, even in the form of inoculation, is a tremendous disorder. And is this the requital which our seamen deserve, for their glorious achievements in the present war? If such is to be their remuneration, *quid labor, aut benefacta juvant?*

What pangs would a British admiral feel, when his brave tars were enduring all the torments of that terrible disease? What would the conquerors of the Nile, Cape St. Vincent, and Camperdown say, were they to behold their brave associates in arms, falling victims to the rage of that cruel distemper the small-pox?

Hi nostri reditus, exspectatique triumphi?

But, it seems, a general inoculation of the small-pox would be preferable *at this time*. Why such a plan would be preferable at this time, is difficult to conjecture; unless a vessel be loaded with the wretches labouring under the disease, and sent into Brest harbour, instead of a fire-ship; in order to destroy by the small-pox, those whom we cannot destroy by the sword.

The most curious part of this comment is reserved to the last. "Our seamen," says this critic, "ought not to be among the first subjects of experiment." While this gentleman is pursuing his literary toils, he

is a total stranger to what is going forward in the medical world, otherwise he would know, that when he penned his strictures, and even when Dr. Trotter wrote his observations which give rise to those strictures, it was much too late in the day, for our brave seamen to be among "the first subjects of experiment." The die was already cast; and the fate of the practice was decided.

That the decision was favourable to the practice, and honourable to him who first introduced it, is no longer problematical. It is now generally acknowledged, even by those who were at first so blind that they could not, or so obstinate that they would not see, its advantage over the small-pox. Despairing to turn the tide of popular opinion in their favour, they are now content with trying to lessen the value of that advantage, and to depreciate the practice.

Yet they cannot abstain from invidious reflections, on those who shewed more discernment than themselves; nor from venting their obloquy on those who have been more active in the cause.—Jealousy, that infirmity of little minds, will account for these pitiful proceedings.

Acute discernment, which leads to prompt decision and firm resolution, is with such persons an object of reproach; while their own wavering, timorous, and irresolute conduct, passes for prudence and circumspection. The bold efforts of genius, by which all

great improvements are made, are considered by them as temerity ; and the dictates of a sound judgment as the suggestions of a disordered imagination. Thus it is, when men of narrow capacity set themselves up as judges ; and consider their own knowledge as the standard of wisdom.

In the paper before alluded to, in the Medical Journal, Dr. Huggan, after paying a well deserved compliment to Dr. Trotter, the physician of the fleet, who had proposed the introduction of vaccine inoculation into the navy, among other improvements ; proceeds to state the advantages of the vaccine inoculation over the variolous. These are so considerable, as to leave no reason to doubt, which we ought to prefer.

One of these advantages, he justly observes, is, that it cannot be communicated by effluvia. Hence, Dr. Huggan is of opinion, and, I think, with great reason, that however similar in appearance the small-pox and Cow-pox are, they are in reality different specific diseases. He then observes, that if, after a general inoculation of the Cow-pox, every child were inoculated, at a certain age, with the same, we might reasonably calculate, that the period was not far distant, when one of the most loathsome diseases, and most destructive of human comfort, of any to which mankind is liable, would be utterly extinguished.

When Dr. Huggan, says, It seems to be agreed

on all hands, that the human body, after having undergone the Cow-pox, is perfectly secure against the infection of the small-pox, he is much too sanguine. There are many persons who still refuse their assent to this opinion.

For example,—Dr. Willich, in his Lectures on Diet and Regimen, speaking of inoculation for the Cow-pox, says, he is not sanguine in his expectations; which have often been disappointed on *similar occasions*.—What *similar occasions* Dr. Willich can have met with, I am at loss to conjecture.

He adds, that, till he can persuade himself of the perfect analogy subsisting between the two diseases, nay of their *homogeneous* nature, he shall patiently wait for a greater number of facts tending to confirm the truth of the hypothesis. Mean while, he says, he is of opinion, that this subject can be decided only when the *small-pox* shall again appear as the *prevailing epidemic*.

If facts are able to convince, no one need long remain unconvinced. The number already published seems almost sufficient to create satiety. If, on the contrary, we are to wait, till it can be made appear, that two different diseases are analogous, and even homogeneous in their nature, as well as in their effects, there is but little room to hope for progress. For my own part, I confess, I see no more reason to doubt, that the Cow-pox, though not ex-

actly of the same nature as the small-pox, may prove a substitute for that disease, than, that Dr. Noehden, the present conductor of the foreign department of the Medical and Physical Journal, may prove a substitute for Dr. Willich.

The scarcity of those who have had the Cow-pox against the infection of the small-pox, is not a mere hypothesis; it is an opinion founded on as ample, and as incontrovertible evidence as any one in the whole circle of medical science. It was not necessary that the small-pox should be the *prevailing epidemic*, in order to settle this point.—*A thousand* patients are not necessary, to infect *one*. *One* is sufficient, to infect *a thousand*; provided they are susceptible of infection.

Were it, however, necessary, that the Cow-pox should pass such an ordeal,—such an ordeal it has now passed; and it would be easy to produce living witnesses of the efficacy of the Cow-pox, sufficient to satisfy the most unreasonable expectations. Many instances I shall produce, in the course of this work; and any person who still continues a sceptic, may easily be referred to a much greater number.

Dr. Huggan next relates a case, where the small-pox, under inoculation, appeared locally; without rendering the patient insusceptible of that disease. Such cases deserve to be registered; because they will prevent the ignorant from exulting too much, if

the same accident should sometimes befall the Cow-pox. He also informs us, that while he was writing his remarks, he had on his arm a vaccine pustule, from inoculation, which was very painful; but without any of the other consequences, which casually attend it.

He informs us, that, being perfectly satisfied, from the proof already before the public, of a person who has had the Cow-pox being rendered insusceptible of the infection of the small-pox, he had not thought it necessary to inoculate any of his patients with the latter disease; but he saw several of Mr. Stewart's patients, on whom the experiment was tried, and, as usual, tried in vain.

Dr. Huggan next observes, that the method of performing this inoculation, from the difficulty that some persons have experienced, in communicating infection, has deservedly engaged the attention of medical men. He thinks the retention of the virus in the punctured part not essential; an opinion, in which he is probably singular. He says, "If any of the matter be left behind in inoculation, *a circumstance not at all necessary*, it will be washed out immediately by the blood." This, however, is a gratuitous assertion; and remains to be proved.

As to the peculiar mode, by which the disease is excited, whether it is by absorption, or mere irritation, and consequent specific inflammation, I must

leave to abler physiologists to determine; not being satisfied with the arguments which I have hitherto met with, on either side. I shall, however, candidly acknowledge my [own opinion; which is, that it is one of those questions in physiology which is not likely soon to be decided; and which in this case, is of very little importance in practice.

Not so the method of performing inoculation; for on this, in a great measure, depends our success. Dr. Huggan allows, that the method which I described in the Medical Journal is less exceptionable than another which has been proposed; yet he doubts whether it is the best. The only difference, however, which I can perceive, between the method described by me, and that practised by Dr. Huggan himself, is, that I insert the lancet obliquely, whereas Dr. Huggan thinks it not material in what direction it is inserted; and that I move the point backwards and forwards a few times, to separate the matter from it; and afterwards wipe the lancet on the puncture, whereas Dr. Huggan thinks a single puncture, sufficient to draw blood, all that is necessary.

This is perfectly consistent with Dr. Huggan's other opinion, that, in order to secure infection, it is not all necessary for any matter to be left behind in the puncture; and that it signifies nothing, how soon the matter is washed away by the blood;—an hypothesis, which is refuted by the constant experience

of inoculators in general, both in the small-pox, and in the Cow-pox.

Dr. Huggan conjures up a phantom, and then lays it. He says, It is not easy to imagine, *how the blood can become susceptible to the action of any poison*; unless, indeed, we dream with Mr. Hunter, about its possessing vitality.—Here he combats with a wind-mill erected by himself. But if we agree with him, that *the blood itself* is not susceptible of the action, it by no means follows, that *the vessels containing that blood*, are insusceptible of its action.

Dr. Huggan admits, that the power of the absorbents is so great, as to take up, not only such animal secretions as *hog's lard*, &c. but even *grosser substances*, as *opium*, *metallic calces*, &c. Hence, he observes, we may fairly conclude, that they possess an equal power over matter of finer, or more minute component parts, such as those of the small-pox and the Cow-pox.

After this admission, it was unnecessary to introduce Mr. Hunter's dream of the vitality of the blood; as being totally irrelevant to the point in question. But an allusion to an exploded hypothesis may be attended with this good effect; it may prevent us from placing too much confidence in those which are the fashion of the day. It may prompt us to predict, that the present theories will prove perishable;

“ And such as Hunter is, shall Huggan be.”

This gentleman says, "The most satisfactory explanation of the manner in which the vaccine, as well as the variolous virus, produces diseases, is, that it acts primarily and solely upon the nervous system; in consequence of which only it is, that any change in the state of the blood takes place." This explanation may be the most satisfactory to Dr. Huggan; another gentleman may suppose it acts primarily and solely upon the arterial, venous, or lymphatic system, in either of which the nerves are only a constituent part; or that it acts on all those systems together, and produces a change in the whole frame.

That the virus is absorbed, both in variolous and vaccine inoculation, appears probable, from the frequent occurrence of tumours in the axillæ. That the virus, thus absorbed, may act on the nervous system diffused through the whole frame, is at least as probable, as that a momentary contact of matter can produce a specific inflammation, and, "that this constitutes the first, or introductory link, of that catenation of motions, which it is the peculiar property of that poison to excite."

I am well aware, that Dr. Darwin's opinion is well founded, of the blood of a person labouring under the small-pox, being incapable of producing that disease, when inserted in the way of inoculation: but this may arise from the degree of dilution, or decomposition, which the matter has undergone. However, while I agree with Dr. Huggan, in rejecting

the humoural pathology, and referring the change that takes place entirely to the specific action of the virus on the solids, I cannot subscribe to his opinion, that leaving any of the matter behind in inoculation is a circumstance *not at all necessary*; or, that wounding a sentient extremity is *all that is necessary*. Were wounding a sentient extremity with the point of a lancet all that is necessary, as Dr. Huggan asserts, there would be no occasion to arm that lancet with the matter of the Cow-pox; a clean one would answer the purpose full as well.

Dr. Huggan admits, that the theory of the poison producing the disease by absorption, is countenanced by the opinions of most writers on the subject. This, it must be confessed, is no substantial argument in support of that theory; when we consider, that the theories of one generation are generally overturned by the next. Whether the disease is excited by absorption or by mere contact, I shall leave to others to determine. But, as Dr. Huggan justly observes, although, from the simple manner in which it can be performed, inoculation appears so trivial a circumstance, yet it may occasionally be of the last importance to the feelings and safety of the patient, that it be performed in such a way, as is most likely to ensure infection.. Whether this end is most likely to be accomplished by a momentary or a long-continued contact, let every practitioner judge for himself.

Two other observations of Dr. Huggan deserve to be noticed. He says, a vein, in its function, as well as its structure, resembles an absorbent. How far the analogy between the function of a lymphatic and a vein holds good, has not hitherto been clearly demonstrated; and of course no hypothesis, resting on such a foundation, can be considered as conclusive. Hence I can see no reason Dr. Huggan has to presume, that a wounded lymphatic is deprived of the power of motion; or that its motion is inverted.

For a proof that no such inverted motion of the lymphatics can possibly take place, I appeal to the following passage in Townsend's *Elements of Therapeutics*.

“The late and much to be lamented Mr. Charles Darwin concluded, that the proximate cause of diabetes is inverted action of the urinary branch of the lymphatics.”

“This doctrine of the retrograde motion of the absorbents, when first announced, met with such a favourable reception, that it seemed to promise immortality to the author's name. Every one admired, as we must continue to admire, his fertility of genius, and vivacity of fancy: yet even at the time, his system did not escape the censure of the best anatomists, and experimental physiologists.

“To establish his system, he either supposes or asserts,

“ That the valves of the absorbents, in some diseases, may suffer their fluids to regurgitate.

“ But, unfortunately for his theory, these valves do not perform their valvular motion by virtue of their living power; for after death, it is equally perfect as during life. Dr. Haighton, with my friend Gimbernat, and many other most experienced anatomists, assure me, that they have frequently, in attempting to make quicksilver pass contrary to the natural course, burst the side of an absorbent, because its valves would not give way. The author indeed appeals to the authority of baron Haller; as affirming, that if mercury, air, or suet, are injected into the absorbents, they will pass the valves very easily, contrary to the natural course of their fluids, when the vessels are a little forcibly distended. But Dr. Haighton suspects there is some error in the reference, as he finds nothing on this subject in the fourth section of the third volume, which is the part quoted: but even admitting the quotation to be just, the authority of Haller, in matters relative to the economy of the absorbent system, is questioned by anatomists of the present day.”

But even if it could be proved, that the power of absorption is lost in a wounded lymphatic, yet surely there are other lymphatics in the vicinity of those which are wounded, able to supply their place. Otherwise how would extravasated blood be absorbed,

when some of the lymphatics, as the sanguiferous vessels, have been ruptured by a contusion?

Dr. Huggan says, he has seldom failed to communicate infection by his method. A little longer experience will probably convince him, that there is no peculiar charm in "a slight puncture, made with the point of a lancet, so as to wound a sentient extremity; of which," he says, "the most unequivocal proof is, the flowing of blood." It is the opinion of most inoculators, with whom I have conversed on the subject, that infection succeeds with the greatest certainty, when the virus is lodged between the cuticle and the skin; and when little or no blood flows.

The next article in the Medical Journal, is a communication from Mr. Shorter, surgeon, of Bloxham, near Banbury.—Mr. Shorter having subjected two patients who had undergone the Cow-pox, to the test of inoculation with variolous matter, was surprised at seeing the degree of inflammation which ensued; attended with pustules in the inoculated parts; and, in one of the cases, with fever, and a tendency to sickness.

Alarmed at these occurrences, he wrote to Dr. Jenner on the subject; whose answer he subjoins. Dr. Jenner there reminds Mr. Shorter, that we seldom find the skin insensible to the action of variolous matter, even in those who have gone through the small-pox; that, from the sympathetic connection

that exists between the skin and the stomach, we cannot be surprised at the nausea, and other affections of the system; and, that the constitution gave every proof of resisting the virus of the small-pox, since even the glands of the axilla were insensible of its action.

Dr. Jenner annexes a case of a young woman, who was inoculated with the Cow-pox; and had the usual pustule on the arm; without suffering the least constitutional indisposition. Some medical men, supposing her susceptible of the small-pox, inoculated her, at different periods, in sixteen different places; but in vain.

Chagrined at their disappointment, they made a deeper puncture than before; and the consequence was dreadful. The inflammation thus produced arose to so alarming an height, that a mortification was expected; *yet no pustules appeared.*

A boy of Dr. Jenner's, who had been inoculated with the *small-pox*, respecting whose safety Dr. Jenner entertained some doubts, was again submitted to the test of variolous virus. His arm inflamed to a considerable degree; and he became indisposed. Two years after, he was a third time inoculated with the same kind of matter; and the same ill consequence took place in his arm; and was succeeded by boils about his shoulder. "Similar instances," Dr. Jenner

observes, "are on record in great abundance; and others which are still more striking."

The Medical Review for April, 1800, contains an account of the progress of vaccine inoculation on the continent. This account comes from Mr. Stromeyer; who, assisted by Dr. Ballhorn, had since the beginning of this year, inoculated forty persons.

We are informed by Mr. Stromeyer, that most of the physicians in Hanover exclaimed against this practice. He says, "Their only weak, and almost refuted argument, is, Are people thus secured for all their life-time against the small-pox?" Nevertheless, he informs us, he had the satisfaction to see a partiality for it displayed by the greater part of the public; and had already inoculated many noblemen's children, as well as those of other very respectable inhabitants of Hanover; and entertained no doubt, but he should always have subjects enough, for continuing this inoculation.

Mr. Stromeyer states, that the matter which he received from Dr. Pearson frequently produced an eruption of small pimples; which disappeared within a day or two; but in no instance did it produce pustules resembling the small-pox.

The matter which he received from Dr. Jenner, is stated to have frequently occasioned ulcerations of the inoculated part, of a long and tedious duration;

which the former never did. Having repeatedly been favoured with matter by each of those gentlemen, I deem it a duty to say, that I have never been able to distinguish any difference, in respect to the local affections produced by either species of matter.

Between individual cases, a manifest difference appears; but, taking them collectively, the degree of inflammation and ulceration was as nearly the same as possible. One circumstance must be remembered; which is, that the local affections are much influenced by the state of the atmosphere. Possibly this may account for the great diversity in the local symptoms, which Mr. Stromeyer has described.

It may also be remarked, that if he had inoculated his patients by means of a simple puncture, instead of inserting cotton thread impregnated with the matter, much of the inconvenience alluded to might have been avoided. This observation, it must be evident, only extends to those cases, in which inoculation was performed with matter taken from his own patients. He tells us, that on the 9th, 10th, or 11th day, when the inoculated pustule is filled with lymph, and the surrounding inflammation is complete, he is in the habit of opening it, and collecting the lymph on cotton thread; immediately after which, he lays more thread upon the pustule, which is removed the following day. He adds, all the matter thus collected, serves for future inoculations.

Mr. Stromeyer also communicates the pleasing intelligence, that this most useful and valuable practice was beginning to spread in the villages round Hanover; and was readily adopted. This proves, that the common sense of mankind is sufficient to overcome prejudices, were not those prejudices strengthened by the misrepresentations of artful and interested men; who abuse the confidence reposed in them by the public. In short, such is the efficacy, and such the practicability, of the means proposed, that nothing but the opposition of certain medical men, prevents this infant Hercules from strangling that deadly serpent, the small-pox.

Such a number of applications were made to Mr. Stromeyer for vaccine matter, from Halle, Halberstadt, and many other places, that he concluded there were already as many friends to vaccine inoculation on the continent, as in England. A report of the success attending this practice was published in the Hanoverian Magazine, which must tend to diffuse a knowledge of the benefits resulting from it; and accelerate its propagation. From Mr. Stromeyer we learn, that Dr. Carro, of Vienna, had also begun this practice. Mr. Stromeyer had inoculated one of the patients before mentioned, with the small-pox. Hence a pustule was produced upon the inoculated part; accompanied with a slight surrounding inflammation; but no other effect whatever.

In the same number of the Medical Review, is a

communication on the same subject, from Mr. Taynton, surgeon, of Bromley; which tends to corroborate the favourable accounts already given of the Jennerian practice.

The evidence brought forward by Mr. Taynton is such, that it cannot be abridged without injury to this most important cause.—He says,

“ If any additional testimony respecting the advantages of the vaccine inoculation should not be deemed superfluous, I beg leave to lay before you a brief statement of the success attending it in my own practice. During the last five weeks, I have inoculated a great number of patients, chiefly children, but some few adults. The disease has been universally mild; so much so, indeed, that in most of the cases no derangement of the system whatever could be observable. Others were feverish, and slightly indisposed; some on the 6th day, others on the 7th, 8th, or 9th.

“ *In no one instance has there been any thing like an eruption of pustules.* I have noticed a few pimples in two or three infants, but they generally disappeared in twenty-four hours.

“ I think the case of one infant of four months rather remarkable. It was inoculated on the 4th of March; I examined the arm daily, but there was no appearance of inflammation. On the 12th day, I

was about to repeat the operation, when I discovered a slight degree of redness. From that time the disease went through its course very rapidly, ending on the 18th day; which has seemed to me to be the usual term of its duration. The arms of two children were prodigiously inflamed, but subsided without any troublesome consequences.

“ I have decidedly proved, what indeed has before been so frequently done, that the disease is *not infectious*: having, for the sake of experiment, inoculated *only* part of a family where none of them had ever had the small-pox. I have also inoculated many of the same patients with small-pox matter, but it has taken no effect.

“ The advantages resulting to the lower classes of people from the introduction of the vaccine pock, are evidently very great; as they are able to pursue their usual employments without any inconvenience.”

In a subsequent part of the same Review, is a paper entitled, “ *Cases and Observations, tending to prove, either the infectious nature of the Cow-pox, or the fallacy of some experiments made in London.*” By Mr. Blair, surgeon of the Lock Hospital, and Finsbury Dispensary, &c.

To these observations of Mr. Blair, the following answer appeared in the next number of the same publication.

To the Editors of the London Medical Review and Magazine.

“GENTLEMEN,

“ In your last number appeared two papers, relative to the infectious nature of the Cow-pox; one tending to confirm, the other to refute that idea. The importance of the subject, and the respect I entertain for Mr. Blair and Mr. Taynton, the authors of the communications in question, induce me to trouble you with a few observations on the same subject.

“ Mr. Blair says, “ Dr. Woodville (to whose benevolent exertions human nature must for ever stand indebted) is the only author, so far as I know, who believes the vaccine disorder, under any circumstances, is capable of infecting in the same manner as the small-pox.”

“ In a paper which I published last August are the following paragraphs :

“ Since most of the foregoing observations were written, I have seen Dr Woodville's Second Report, confirming the opinion he expressed in the first; and acknowledging that he has lately been much more successful in his practice, in consequence of his refraining from taking matter from patients who had the disease severely,—a caution I have always observed.

“ It has been asserted, that the Cow-pox cannot

be communicated but by contact; and in the most positive manner, that it certainly cannot be communicated by means of effluvia, where there is no pustule but that of the arm. In this respect, I think, gentlemen have been rather too hasty in forming their conclusions; since the disorder has been so short a time under their immediate care and inspection. *I have seen one instance where the disease was communicated, without a possibility of its being received by contact, and where the child, from whom the infection came, had no pustule but that on the arm; and from good authority I have heard of another instance, where the infection was caught from one who had a considerable eruption.*

“ The two patients in Caroline Court, alluded to by Mr. Blair, were mine, as he has suggested. When I applied to Dr. Pearson for some vaccine matter, he complied with my request; but, at the same time, desired he might be allowed to attend, with me, those patients who were inoculated with matter furnished by him: he therefore visited and inoculated those two patients *with me*.

“ The appearance of a considerable eruption in the two cases above referred to, and in some others, occasioned a variety of conjectures at that time; but at present, no one who has seen much of the practice with genuine Cow-pock matter, can possibly entertain a doubt, that the matter was variolated by some means or other. Whether this contamination took

its rise from a variolated lancet, or a variolated atmosphere, I shall not pretend to determine; having never seen the matter, nor the lancets, till the moment when the inoculation was about to be performed.

“ I have seen a number of persons inoculated with supposed vaccine matter, who had eruptions in a trifling degree, both in my own practice and in that of others; but the eruptions in general were not pustulous. They rather resembled the tooth-rash than the small pox; and were neither attended with danger nor inconvenience. In some instances a small vesicle has appeared, not altogether unlike that on the arm; but without any material inflammation.

“ The matter I have used for six months, I was favoured with by Mr. Paytherus, by desire of Dr. Jenner; to whom I had written, requesting some of the same kind that was found so successful in his own practice.

“ In the first five cases, one was attended with a pustulous eruption. Since that time I have inoculated about a hundred, in none of whom varioliform pustules have appeared. I am confident the pustules were not produced by any mixture of variolous matter; but am apprehensive such a circumstance might sometimes take place; as I have had lancets sent to me to be armed with vaccine matter, having matter of a different species upon them, which upon inquiry, proved to be variolous. Had I not discovered this fact, undeserved blame might have

fallen on the new practice. I hope all practitioners will follow the method observed by many others as well as myself, and not use the same lancets for more than one kind of inoculation.

“ I congratulate you on the acquisition of Mr. Taynton as a correspondent: at the same time I must object to one of his assertions. After informing us, that during the last five weeks he has inoculated a great number of patients, chiefly children, but some few adults, and adding his testimony in favour of the Cow-pox, to that of every other practitioner who is acquainted with the appearance of the disease, he makes the following remark: “ I have decidedly proved, what indeed has before been so frequently done, that the disease is *not infectious*; having, for the sake of experiment, inoculated *only* part of a family, where none of them had ever had the small-pox,”

“ I have made the same experiments in a number of instances; but by no means conclude that the disease is *not infectious*, without stronger evidence. A negative is not so easily proved. The following passage, in a letter from Dr. Jenner, first convinced me that the disorder is not contagious: By no means that I could devise, have I been able to infect a person by the effluvia of the simple Cow-pock pustule, although I have tried several. Among others, I have suffered children, two or three times in a day, to inhale by the mouth and nostrils the effluvia of pustules on the arms of others; when the matter has been

in its most active state, and the pustules punctured in several places to give it the fullest effect."

" If any additional proof be necessary to remove all doubt of the Cow-pox being infectious in a state of effluvia, it may be drawn from this circumstance, that even the casual disease, when most severe, has never been suspected to be capable of infecting any person, except by contact.

" These proofs are sufficient for every useful purpose: and I doubt not but this, as well as every other discussion of the subject, will tend to remove any remaining objections to the general introduction of the practice. I am with great respect,

" Gentlemen,

" Your most obedient humble servant,

" *New Street, Hanover Square,* JOHN RING."

May 6th, 1800.

Another article in the same number announces a new emporium for vaccine matter. This advertisement was transmitted to the editors by an anonymous correspondent, who candidly confesses, that there is scarcely a doubt remaining in the minds of practitioners in general, of the Cow-pock matter having been contaminated with variolous matter, from various causes. On this account, he observes, *as well as on account of the variolous matter having gained admittance into the human body previously to the vaccine,* many cases have occurred, in the practice of the new

inoculation, which were not the real Cow-pox; without any blame being justly due to the person, by whom the inoculation was performed.

The author of this article, whoever he may be, was not so ignorant as to expect, that the Cow-pox would constantly supersede the small-pox; when the contagion of that disease had taken previous possession of the habit. Had gentlemen taken the trouble to peruse what was promulgated to all the world by the supporters of this practice, or had they for a moment reflected on the subject, they would not have been much surprised at those events which have since taken place; nor have been so rash as to conclude, that, because the Cow-pox cannot do every thing, it can do nothing.

In a note on the preceding passage, the editors admit, that the cases communicated to them by Mr. Blair appear to have been of a spurious kind.

The author of the article in question informs the public, that the new institution for the Cow-pock inoculation merits the support of the public for several reasons, and especially because a stock of pure vaccine matter will be preserved there, *for the use of the public*. Forgetting to insert *venalis prostat*, he has deceived many. There is, however, reason to hope, that the increasing prosperity of that institution, will soon enable its legislature to allow the exportation of vaccine matter, duty free, to every part of the world.

The author of the article in question warns the public, that matter is not warranted as genuine by the managers of that institution, unless it be delivered under their seal; which bears the impression of *a cow*, and the motto *Feliciores inserit*. These devices, he says, evidently allude *to the origin of the poison*; and *to the discovery of the practice by accidental inoculation*.—He found *the cow* ready made to his hands; and, to shew his talents, was determined to make *a bull*.

The next article in the Medical Review contains information relative to the vaccine disease, by Mr. Washbourn of Marlborough, member of the Royal College of Surgeons in London.

Mr. Washbourn says, as a proof of the good effects that are likely to accrue from the introduction of the vaccine inoculation, he takes the liberty of communicating the result of his observations upon the subject.

The first patient whom he saw, was his servant; who was inoculated by Mr. H. Jenner. In this case, the constitutional symptoms were of short duration; and such as appeared to arise from the inflammation of the arm. Many other persons were inoculated from this patient; and the cases all terminated in much the same manner.

Mr. Washbourn's servant was afterwards inocu-

lated with recent variolous matter. On the two subsequent days, the punctured parts appeared inflamed, with a slight vesicle; but it totally disappeared on the fourth day.

In the Medical Journal for April, 1800, a letter on the same subject, from Dr. Denman, was inserted.

In this letter Dr. Denman enumerates the advantages likely to result from inoculating for the Cow-pox; namely, its producing insusceptibility of the small-pox, and its being wholly free from danger. He likewise remarks, that it appears, from the manifold experiments and observations of Dr. Jenner, to have been seldom attended with fever; and never with suppurating eruptions; that any disturbance excited in the constitution, during inoculation for the Cow-pox, is easily regulated or suppressed by proper topical applications; and lastly, that one person might be inoculated with vaccine matter, without the hazard of infecting the rest of the family.

He then observes, that as the Cow-pox was scarcely known, even by name, to physicians in general, before the publication of Dr. Jenner's treatise, experiments, in order to ascertain the nature and effects of that disease, were made under a disadvantage; but in no one instance, in a manner so obviously unfavourable, or so likely to defeat the intention, as in their being made at the Small-pox Hospital; notwithstanding the acknowledged abilities and integrity

of its physician, Dr. Woodville. Dr. Denman expresses his opinion, of its not being at this moment doubted, *that the two diseases have been confused; and that many cases recorded, as of the Cow-pox, ought, in fact, to have been assigned to the small-pox.*

He next adverts to the many vague reports that have been circulated, respecting the violence of the disease produced by inoculation for the Cow-pox; as well as of persons receiving the small-pox after such inoculation. He affirms, that neither of these points has, in any one instance, been supported by convincing evidence; and some of these reports Dr. Denman knows to have been false.

He justly observes, that in consequence of the important facts brought forward in Dr. Jenner's treatise, "*it became the duty of medical men, especially of those who are much engaged in the practice of inoculating for the small-pox, or who are often consulted on infantile diseases, to examine the truth of these by experiments; and to observe the result of them with all possible care.*"

Mindful of this duty, Dr. Denman has constantly promoted the practice; and given it every possible support. He has even prevailed on one of the first peers of the realm to recommend it; and to exert himself in favour of this great cause of humanity.

Dr. Denman says, he himself has seen a consider-

able number of children inoculated for the Cow-pox ; who went through the disease without the least sign of danger, and even without any fever or indisposition worthy of notice.

As a proof that the Cow-pox is a security from the small-pox, he mentions the following fact ; which was related to him by the colonel of the regiment.

“ In one of the regiments of the Gloucestershire militia, upwards of one hundred men, who had not had the small-pox, were inoculated for the Cow-pox, and had the disease. This regiment was shortly afterwards ordered to go into barracks, which had been inhabited, and were just quitted, by a regiment which had been infected with the small-pox, and suffered severely from it. The barracks were not even cleaned, before the Gloucestershire regiment took possession of them ; yet not one of the men who had been inoculated for the Cow-pox, was infected with the small-pox.

The next article in the Medical Journal, is a letter from Mr. Grose of Winslow ; containing some remarks concerning the origin of the Cow-pox, and the appearance of pustules in that disease.

Mr. Grose says, he has had “ many opportunities of conversing with respectable farmers, whose cows were affected with the disease ; and they unanimously agree in ascribing it to a complaint in the horse’s heel ;

which is called, from its singularity of making the hair erect, *a scratchy heel.*"

Mr. Grose says, there are many disorders incident to the heel, which do not come under this description; and that excess of food, or want of exercise, will frequently excite swellings, which are by no means connected with this complaint.

From Mr. Grose's account it appears, that the spurious Cow-pox is produced by the common causes of inflammation, and propagated by the contact of putrid matter. The genuine Cow-pox, he observes, may always be distinguished by the appearance of *concave scaly eruptions*; which are never produced by the spurious sort.

Mr. Grose affirms, that a person who has had the Cow-pox is rendered insusceptible both of that disease, and of the small-pox. That this is true, as a general rule, can no longer be doubted. Hence, I apprehend, the utility of vaccine inoculation to those who live in a dairy, a practice I have already recommended, independent of its being a preventive of the small-pox, must be manifest.

As a proof of this, among a variety of well-attested cases, which have come to the knowledge of Mr. Grose, he relates the following.—*A farmer, at some distance from Winslow, had the Cow-pox a few*

years ago: and, although he has been in the habit of milking cows, when the disease has appeared in its most virulent state, he has never experienced so much as an inflamed hand; nor has he received any infection from the small-pox, though recently inoculated. This may serve as another answer, to those who pretend, that the Cow-pox is only a temporary preventive of the small pox.

But the argument does not rest here: for, independent of the mass of evidence already submitted to the consideration of the reader, in the course of this work, Mr. Grose asserts, and says he could recount numerous cases to corroborate his assertion, that those who have had the Cow-pox are thereby rendered insusceptible both of the Cow-pox and small-pox.

He maintains, that if ever the small-pox occurs, after a person has had the Cow-pox by inoculation, it must arise from a mistake in the matter employed; as he has never known variolous matter excite the small-pox in any one who had undergone the Cow-pox, at whatever distance of time it was inserted.

Mr. Grose is inclined to espouse the opinion of those, who think pustules resembling those of the small-pox a frequent occurrence in the Cow-pox. He says, they have been known to appear, when a new lancet was used; and that he himself had lately witnessed one convincing proof of the same nature,

where a farmer inserted the vaccine matter on the point of an awl. Here, however, the evidence is defective; and one link in the chain of argument is wanting. Admitting that the awl was free from small-pox matter, it is by no means clear, that the supposed Cow-pock matter had not a little of the old leaven.

All sorts of people, it seems, inoculated in that place; and it is reasonable to presume, they inoculated with *all sorts of matter*. Three out of five, of the persons who were inoculated by this mock doctor, had eruptions; but we have no evidence to prove, that the matter employed was obtained from a pure source; and that it had not undergone a previous contamination.

It is true, those who were inoculated from the pustules, had the Cow-pox in a mild manner, without any eruption; but there is something so eccentric in the nature of this disease, that even this is not an incontrovertible proof of the pustule not containing a mixed matter; and, as the Cow-pox appears able, in some instances, to prevent the small-pox, when substituted in time, it may be capable, in some measure, of overcoming that virulent poison. It must be recollected, that in the cases here mentioned, the patients were not breathing a variolated atmosphere, to renew the taint.

Mr. Grose asserts, that the pustules arose, not from

the small-pox ; but from a deep insertion of the vaccine virus. This, however, is a gratuitous assertion ; or, at least, one that rests on slender proof. Till it is clearly demonstrated, that a deep insertion of virus has produced the same effect in other instances, we may be excused for suspending our judgment in this case.

Mr. Grose justly concludes, that a more valuable discovery, than this preservative against the small-pox, can never be made ; as it will be the means of diminishing, if not utterly annihilating, the fatal influence of a disorder, which has so long been the desolation of the human race ; and expresses the satisfaction he feels in being able to add, that the practice is daily becoming more extensive.

As an additional proof, if additional proofs can be wanting, after those already recorded in the course of this treatise, that the preservative power of the Cow-pox is no new-fangled doctrine, Mr. Grose acquaints us, that the person whom he particularises, as having been protected both from the small-pox and the Cow-pox, by the efficacy of the latter disease, recollects the Cow-pox being known in that county as a security against the small-pox, thirty-six years ago.

In the Medical Journal for May, 1800, is a letter from Dr. Pearson, concerning the evidence which had then appeared, with regard to the vaccine disease.

To this letter Dr. Pearson subjoins a note, specifying some instances where varioliform eruptions took place. These, however, it has already been observed, are now extremely rare. Dr. Pearson's account of the happy success, and rapid progress of the new inoculation is such, as must give sincere pleasure to every well-wisher of the human race.

In the same number of the Medical Journal, is a letter from Dr. Pearson concerning a false report which had been circulated, respecting the supposed inoculation with Cow-pock matter at Petworth. That point has been sufficiently discussed, in a former part of this work.

The same number of the Medical Journal contains a most valuable communication from the Rev. Mr. Finch, minister of St. Helen's. This philanthropic divine received a lancet, on the eighth day after it was armed with vaccine matter, from the Rev. Mr. Holt, rector of Finmere, of whose labours in the same vineyard I have already made honourable mention. This lancet, in the hands of Mr. Finch, excited the disease; and, by a series of inoculations, continued from November till March, was the happy instrument of preserving 714 human beings from all the horrors of the small-pox.

To say that the disease was in general mild, and scarcely worthy of the name of a disease, is to say no more than will be readily anticipated by every

person, who has seen much of the practice. One circumstance, however, deserves peculiar attention; which is, that a child, who from his birth till the time of inoculation was of a feeble habit, not having much desire for food, or inclination to play, is since grown a robust active boy, and eats his meat with a good appetite. The same happy effect of the Cow-pox has been observed by Dr. Jenner, and every other practitioner, who has had much experience in that disease.

Mr. Finch informs us, that the pustules on the arm began to appear about the fourth day, and arrived at their full size about the ninth; at which period the surrounding efflorescence was in general about an inch and half in diameter.

Many of those who were inoculated, had no apparent indisposition. In others, constitutional symptoms were manifest about the evening of the fourth day. Some were restless; others a little feverish. Some were affected with chilliness and thirst; others with a slight head-ache; some with twitchings in their sleep, and others with drowsiness, and an inclination to go to bed. In a few cases, the patients were sick, and vomited. A pain of the axillæ was a common attendant of the complaint.

These symptoms, when they appeared at all, are represented by Mr. Finch to have been extremely transient. They seem to have been the effect of the

fever of a day, or rather of an hour. In almost every case, they vanished before the next morning.

In one instance, the pustule did not appear till the eighth day; and in another, not till the fifteenth. There was no eruption worth mentioning, in any one case. A few anomalous symptoms were observed; but too trivial too deserve a repetition. Some of the pustules on the arm were nearly half an inch in diameter; many a quarter of an inch; and others less. The surrounding inflammation varied still more.

Mr. Finch confirms the general remark of those who are versed in this kind of inoculation: that it is difficult to produce infection in those who are of a weak habit. On this account, he prescribed for those in whom inoculation failed, a more generous diet than what they had been accustomed to; and directed the mothers of such as were at the breast, to drink a glass of good beer daily. The consequence was, that infection was afterwards readily communicated; and he observes, in addition to the single proof of the kind before recorded, that the constitutions of such as were feeble before inoculation, have been much improved.

In order to afford a proof of the efficacy of the Cow-pox to those who live in his neighbourhood, Mr. Finch inoculated with variolous matter, twenty of his patients who had undergone the vaccine disease two or three months before; and they all resisted its

infection. An inflammation was visible on the puncture the second day; which continued three, four, or five days, and then began to disappear. In two of the cases, a pustule, of about a quarter of an inch in diameter, was produced; but unattended with any constitutional affection.

After some reflections on the wonderful effects of vaccine inoculation, Mr. Finch concludes with the following well-merited eulogium: "It surely cannot be too highly prized. To the discoverer of it every praise, every gratitude is due. The joy and delight it diffuses throughout every family here, is inexpressible; and it may not be unbecoming to subjoin, it gives me the liveliest satisfaction and pleasure, to hear the people exclaim,—Blessings on the head of him, that first wrought such happiness for us!"

In the same number of the Medical Journal are inserted, a letter from Mr. Dunning, of Plymouth, to Drs. Jenner, Pearson and Woodville, concerning vaccine inoculation; and a number of queries relative to the same subject.

Mr. Dunning thinks, and there are many others of his opinion, that the small-pox, in consequence of its becoming more general by means of inoculation, is more fatal than it was before. Hence he deems the total extinction of that disease as much a desideratum as ever. He considers the Cow-pox as an obvious and ready mode of accomplishing this pur-

pose;—a mode, before which all other human arrangements sink into futility. This plan, he affirms, is neither visionary, nor romantic.

He says, the human mind is, and he thinks happily for the world, so constituted, that it always meets at first new propositions, and even new truths, with great caution and reluctance. “On this account,” Mr. Dunning says, “it has for the most part been found indispensably necessary, frequently and familiarly to present them; in order that they may be fully admitted and received.” This may plead some apology for the frequent repetitions that occur in the course of the present dissertation. Among those who are not blinded by prejudice, the arguments which are advanced in these passages may gain some converts, and succeed,

non vi, sed sæpe cadendo.

Mr. Dunning contends, that as general and repeated exertion will do much, it certainly behoves medical men to co-operate in the prosecution of a question, indisputably the most important in the history of medicine.

After reflecting on the subject, Mr. Dunning is convinced, that the most effectual means of counter-acting prejudices, and fixing the attention of the public on this object, will be, to insert, first in the Medical Journal, and afterwards in some more ge-

neral vehicle of intelligence, answers to the queries which he has proposed.

.He proceeds to remark, that should the abolition of the small-pox at last be effected, the beneficial consequences that would result from it to mankind are incalculable. He affirms, that if a stop could be put to the ravages of this wide-wasting pestilence, the chasm in population, produced by the present war, would in a few years be filled up; and the greatest source of domestic affliction would be removed. He expresses a hope, that it will in a short time be considered as much a matter of course, and be felt as much a duty, to inoculate infants with the vaccine virus, as to give them a name.

Mr. Dunning asks, Whether the Cow-pox can protect from the measles? A number of instances have occurred, which convince me that it affords no such protection.

The queries which are subjoined to his letter by Mr. Dunning are answered by Dr. Jenner in a subsequent number of the Journal. Three of them, however, which may be comprised in one, I shall make the subject of a few remarks.

Mr. Dunning asks, What has been the health of those who had the Cow-pox many years ago? He asks, Whether they are more subject than others to scrophulous and cutaneous diseases; whether they

are affected with complaints of a *peculiar character*; and whether *any impressions* have been left on their constitutions, which can be referred to the *vaccine excitement*?

If we may believe Mr. Henry Jenner, who has favoured us with his opinion through the medium of the Gentleman's Magazine, health and beauty reign in the Vale of Gloucester, in spite of the Cow-pox; and we do not find, that the inhabitants of that part of the kingdom are more affected with *quadrupedan sympathies*, or more *troubled with horns*, than their neighbours.

In the Medical Review for June, 1800, the following communication appeared.

To the Editors of the London Medical Review and Magazine.

“GENTLEMEN,

“In the paper which you did me the favour to insert, in the last number of your very valuable publication, I gave an opinion, that certain eruptive cases were not cases of Cow-pox. An instance lately occurred, where a lancet, armed with variolous matter, was used by mistake instead of a clean one; and, although it was dipped in vaccine virus previous to operation, the variolous matter completely predominated. The pustule from which the vaccine virus was taken, was too far advanced to justify the least hope of its superseding the small-pox. It was taken

on the twelfth day; and the pustule had been repeatedly punctured before. This case was seen by several eminent men of the profession.

“ In the month of August I ventured to assert, that two morbid actions, in the same subject at the same time, were not incompatible. Two cases in the New York Medical Repository, by Dr. Tracey, confirm this opinion. I lately met with an instance, where the Cow-pox and measles were complicated. This case I shewed to Dr. Jenner, and to Dr. Marshall, of Gloucestershire, who, in the annals of vaccine inoculation, is second only to Dr. Jenner. I also shewed the case to other medical friends. The measles appeared on the eighth day of the Cow-pox; and the pustule was neither superseded nor retarded by that disease. The Rev. Mr. Jenner, nephew to Dr. Jenner, informs me, that he lately met with a case exactly similar.

“ The origin of the Cow-pox is now clearly ascertained. Dr. Jenner lately sent me some matter which Mr. Tanner, of Rockhampton in Gloucestershire, produced, by inoculating a cow from the heel of a horse; and also some from the dairy maid who milked the cow. The former, being taken at a very late period of the disease, failed; but the latter took place, and the true vaccine pustule has been excited by it four or five times successively.

“ Dr. Marshall, of Stonehouse, whom I mentioned

before, is now in this town : he is going to Naples to communicate the benefits of vaccine inoculation to that part of the world. From him I have also received Cow-pock matter taken from his own child, and furnishing another proof of the source from which the distemper is derived.

“ When Dr. Marshall was consulted about the dairy-maid of a farmer in his neighbourhood, he perceived four or five pustules on the back of her hand. Upon enquiry, it was found that the Cow-pox was in the farm ; and that the farmer’s son, one morning when he had been dressing the heels of a horse, milked the cow in which the disease afterwards broke out, because she was too unmanageable for the milk-maid.

“ Mr. Rankin, a surgeon, of Eastbourn, lately sent me a case of a disease, occasioned by matter from the horse’s heel, greatly resembling the Cow-pox ; and I am informed by good authority, that Sir Christopher Pegge is possessed of evidence, to prove the truth of the opinion advanced by Dr. Jenner.

“ This is no idle investigation. It tends to instruct mankind how to prepare an antidote for the worst poison ; and a prophylactic for the most dreadful disease.

*New Street, Hanover Square,
June 11,*

JOHN RING.”

In the same number of the Review is a letter from

Mr. Blair, containing further remarks on the infectious nature of the Cow-pox. In this letter Mr. Blair confesses, that when he first invited medical men to the discussion of the subject, he entertained doubts whether the cases to which he then alluded, were cases of the Cow-pox. These doubts appear to have been perfectly removed; together with all suspicion of the Cow-pox being infectious in the form of effluvia.

Mr. Blair having received letters from the two medical men, who had attended the cases which he had seen, testifying that they were now fully convinced the disease was the small-pox, concludes that no inference is to be drawn from what ensued, of the Cow-pox being contagious in a gaseous form. This information, he says, he was desirous to make known as soon as possible; because several indiscreet practitioners, having more zeal than experience, seem solicitous to persuade the world of the contrary. He adds, that upon strict enquiry into the validity of the facts insisted on, he finds not the least ground to believe their assertions; for their whole mass of evidence consists either of vague, unauthenticated, and idle reports, or of cases which no competent medical observer has attested.

Mr. Blair asserts, that although certain persons deny the Cow-pox to be a *permanent* preventive of the small-pox, there exists *credible* and *sufficient* proofs of the contrary. A letter which he had received from a medical practitioner of Stroud-water, Gloucester-

shire, recites a number of cases to confirm this opinion.

One of these cases, Mr. Blair remarks, is deserving of particular attention. A woman who had undergone the Cow-pox *forty years before*, was twice inoculated for the small-pox, without any other effect than inflammation of the arm; considerable after the first, but slight after the second inoculation. She likewise affords another instance to prove, that those who have had the Cow-pox are less susceptible of that disease; for, some years after, being at service in a dairy, where all the other servants caught the distemper from the cows, she escaped infection.

Mr. Blair strenuously maintains, that the advantages which are said to result from the new inoculation, have not been announced to the public on slight grounds. He himself had at that time obtained intelligence of about *fourteen thousand* persons having been inoculated for the Cow-pox. I am inclined to believe, there had been at least twice as many. The number that has now been secured from the ravages of the small-pox is incalculable. The practice is established in almost every part of the kingdom; and so many practitioners apply for matter, that those who devote themselves to this branch of the profession can scarcely supply the demand.

Since, therefore, a substitute so mild, an alternative so far preferable, is offered to the public, it is

much to be lamented, that the inoculation of the small-pox is not prohibited by law. Surely legislative interference is necessary; and a severe penalty ought to be laid on the crime of disseminating this pestilence.

In the Medical Journal for June, the queries inserted in a former number, by Mr. Dunning, are answered by Dr. Jenner.

Dr. Jenner observes, that although the purport of the following answers has been already given, in his treatises on the Cow-pox, yet in deference to the gentleman who proposed the queries, he requests the following may be laid before the public.

First. The inoculated Cow-pox, taking the result of a great number of cases, appears to be as much milder than the inoculated small-pox, as the inoculated small-pox is milder than the natural.

Secondly. The Cow-pox appears not to be infectious in the form of effluvia.

Thirdly. "A person on whom the vaccine pustule has been excited by *perfect* matter, and has *completely* gone through the progressive stages of inflammation, maturation, and scabbing, is ever after secure from the small-pox."—Here I beg leave to propose an amendment; and that the sentence should

conclude in this manner ; “ is secure from the future infection of the small-pox.”

Fourthly. Dr. Jenner has seen pimples excited by the Cow-pox, sometimes with a little fluid at their apex ; and in two instances a vaccine pustule, resembling that on the arm produced by inoculation ; but in no instance a pustule resembling a small-pock.

Fifthly. The Cow-pox has never been known to leave impressions in the system unfavourable to health ; but has often been observed to correct a scrophulous diathesis, when existing in the constitution.

Sixthly. No peculiar diseases have been noticed, in those who have undergone the Cow-pox, after a lapse of time.

These answers of Dr. Jenner must be satisfactory to every candid enquirer ; and it will afford sincere pleasure to every benevolent mind, to learn how rapidly a practice, fraught with such unspeakable advantages to mankind, is likely to be spread over the whole face of the globe.

Other avocations having prevented me from publishing this treatise so soon as I intended, a considerable change has taken place in the public mind, in favour of the practice ; occasioned partly by the suc-

cess attending it; and partly by different testimonials of its safety and efficacy, communicated to all ranks of society, through various channels. This will be sufficient to reconcile any apparent inconsistencies, relative to that topic, which may occur in the course of this work.

The following letter, which I have just received from Dr. Marshall, now on his way to Naples, will shew in what estimation the practice is held in one part of the world; where Britain has rendered herself illustrious by arts, as well as by arms.

"Gibraltar, Aug. 23d, 1800.

"MY DEAR SIR,

"I MAKE no doubt of the satisfaction you will feel, when I inform you of the very polite reception, and great attention we have met with, from the Governor, General O'Hara; who interests himself much in the success of that great discovery, of which we are the missionaries; and set the example to the garrison, by having his own infant inoculated. We have since inoculated the soldiers of the garrison, and their children, who have not had the small-pox;—and tomorrow we expect to sail for Minorca, with recommendations to inoculate the English army now lying there.

"From the medical men here, we have met with the most liberal and polite attention; and I am further happy to add, that all are equally convinced of

the efficacy of the Cow-pox in resisting the small-pox, and of the great reward due to our friend Dr. Jenner, for the benefit he has conferred upon society, and the world at large, by his investigation of this so peculiarly mild and safe disease.

“ In this warm, and, in comparison with England, hot climate, we have not observed any dissimilarity of symptoms in the progress of the disease, from what is usual in England.

“ The Governor has applied to the court of Madrid, to obtain liberty for us to go there to inoculate; and it is probable, that upon our return to England, we may stop there a short time.—Some of the matter we used for inoculation here, was what you obligingly furnished me with, and we find it perfectly efficacious, although no precaution had been used as to the preserving it, more than putting it into a small phial.

“ I shall from Minorca send you the result of our inoculation; though I have no doubt of its proving as successful as it has done here.

“ Dr. Walker begs leave to present with me our joint respects and good wishes. Believe me ever

“ Your obliged friend,

“ J. H. MARSHALL.”

The conduct of the Governor of Gibraltar deserves to be recorded. It affords a memorable instance of magnanimity and generosity towards a foe. Such acts of benevolence ennoble human nature,—reconcile contending nations,—and heal the wounds of war.

Nor should we withhold the tribute of applause, so justly due to those, who established this wonderful improvement of the healing art at Gibraltar. We may now say of the Jennerian practice, literally as well as metaphorically,—It is founded on a rock;—the gates of hell shall not prevail against it.

To return from this digression: in the Medical Journal for July, 1800, is a letter from the Earl of Derby to Dr. Denman; in which his Lordship states, that the arm of one of his children, who had been inoculated by Mr. Knight, was much inflamed the next morning; that in a few hours a small vesicle appeared on the punctured part, from which it was concluded that infection had taken place, till Mr. Knight expressed his doubts on the subject. These doubts were soon converted into a certainty; for in a short time the inflammation subsided, and a slight incrustation was formed on the vesicle, which had not the true character of the Cow-pox.

The child was afterwards inoculated *a second time*, and with a similar event; but a *third* operation suc-

ceeded completely. The genuine vaccine pustule appeared; and followed its usual course.

A circumstance which occurred to myself, is a convincing proof, how accurate we ought to be in our discriminations; and, with all our care, how difficult it is, in some cases, to avoid a deception.

In one instance, where I inoculated an infant with a thread impregnated with vaccine fluid received from Dr. Jenner, a slight inflammation and suppuration succeeded. On the fifth day, the incision contained a small quantity of matter; but on the seventh it was healed. When the inflammation should have been increasing, and producing vesication, it had totally vanished.

Not satisfied with such equivocal evidence, I inoculated the patient with recent matter, on the point of a lancet, and had the pleasure of seeing the true crystalline pustule appear; a convincing proof, that the preceding phenomena were fallacious.

Dr. Denman, after a just eulogium on the noble Lord who condescended to communicate the preceding intelligence, for his humanity and liberality, observes, that when the practice of inoculating for the small-pox was first introduced into this country, objections founded on error were urged against it. He is of opinion, that the vague reports which are un-

favourable to the new practice have no better foundation ; but, where they are believed by their authors to be true, *which is not always the case*, he concludes they arise, either from some mistake in the matter, or in the conduct of the operation.

He justly observes, that the objections raised against the small-pox, although they were founded in speculation and opinion, and have at length yielded to the authority of facts and experience, and are now almost forgotten, have taught medical men the necessity of great care and circumspection, in every step they take.

With regard to the Cow-pox, Dr. Denman affirms, that he has not heard any reason, nor seen or known any fact, that has induced him to change his opinion ; or entertain a doubt, that many and great advantages will be derived from the introduction of the practice.

He remarks, that the force of all the arguments advanced, and the spirit of all the wit employed, against this practice, lies in the single word *bestial*.

If the good sense of the good people of this country has not forsaken them at the present juncture, the argument urged by these gentlemen against the practice, on account of the *brutish origin* of the matter, will prove a *brutum fulmen* in their hands. It is, however, a little unbecoming in these gentlemen, to

deride animals that are destitute of reason; and to look on their fellow creatures with contempt.

Nothing can be more unworthy of the philosopher or the physician, than to despise a remedy on account of the humble origin from which it springs. The ways of Providence are unsearchable; and far above human comprehension. It is true, the animals to which we are indebted for this preservative are destitute of reason;

atqui non Massica Bacchi
 Munera, non illis epulæ nocuere repostæ:
 Frondibus, et victu pascuntur simplicis herbæ;
 Pocula sunt fontes liquidi, atque exercita cursu
 Flumina, nec somnos abrumpit cura salubres.

Yet no rich feasts, or wine inflames their blood,
 But browse, or simple herbage is their food,
 Their drink the fountain, or the crystal flood:
 Their nights are still with wholesome slumbers blest,
 And no rude cares disturb their tranquil rest.

The next article in the Medical Journal, relative to inoculation, is an account of a pamphlet published in 1746, by Dr. Pierce Dod; tending to disparage that practice; because now and then an instance occurred, where those who had been inoculated, and were supposed to have had the small-pox, afterwards caught it in the natural way.

Whether the small-pox really happens twice in one person, is a question still *sub judice*. The majority

of medical men appear, at present, to believe the affirmative. The charge, however, of the disease not being an effective and absolute security against itself, is not confined to the artificial, it is extended to the natural small-pox also. Many cases have come within my own knowledge, where a person has had the small-pox; who was supposed to have had that distemper before.

The pamphlet alluded to, was answered by Kirkpatrick; who, for the sake of giving greater scope to the severity of animadversion, affected to suppose, that it was not written by the real Dr. Pierce Dod. However, no one doubted of its being written by the real Dr. Pierce Dod; nor can we doubt that there are real Pierce Dods at the present day; men who are unwilling to relinquish a rich harvest, or to lop off a single limb of the profession. Yet some apology may be made for their zeal in behalf of the small-pox: they are loth to part with an old friend, to whom they are under great obligation, or abandon a cause, in which they have received a handsome *retaining fee*.

In a subsequent part of the same useful vehicle of information, we find a letter from Mr. Cooke, of Gloucester, to the editors; in which that gentleman makes a candid acknowledgment of his error, in having opposed the vaccine inoculation. He declares, that he now approves of the practice; but thinks it

should only be conducted by practitioners who are judges of the disease.

The communications of Mr. Kelson and Mr. Edward Leese have already been adverted to, in the course of this dissertation. Since I quoted Mr. Leese's case and others, in confirmation of the opinion I had long before advanced in the same publication, that two eruptive diseases might co-exist, other instances have come to my knowledge.

One occurred in a patient who was inoculated for the small-pox, by Mr. Nicholas, of Oxford-street; and sickened on the eighth day. On the eleventh, an eruption of the small-pox took place. On the same evening there was a considerable increase of fever, attended with cough, watery eyes, sickness, and an eruption of the measles. From this period the eruption of the small-pox ceased; but the pustules regularly proceeded to maturation; not being in the least degree retarded by the concomitant disease.

Several cases of the co-existence of Cow-pox and small-pox have lately fallen under my own observation, and that of others. One was communicated to me by my friend Mr. Thomas, and to him by a gentleman of Manchester; who, with matter taken from the vaccine pustule on the arm, produced the pure and genuine Cow-pox, and with matter taken from

another part, produced the pure and genuine small-pox.

The same gentleman says, he has been attending some beautiful ladies in the neighbourhood of Manchester, in their operations of inoculating for the Cow-pox. If medical men do not, in every part of the world, follow the example of a few individuals, and inoculate the poor gratis; I hope the ladies will every where rise in a mass, and repel that rude invader of the health, peace and happiness of mankind, the small-pox. It may be doubted, however, whether the Lancashire witches ought to be suffered to proceed in the execution of their plan; lest they should kill more by their charms, than they save by their practice.

In respect to the co-existence of eruptive diseases, I am persuaded it is a much more common circumstance than it is generally imagined to be. I have seen one this day, in a child of Mr. Taylor, a butcher, in Kent-street, Southwark. This child was brought to me fifteen days ago, to be inoculated with the Cow-pox. Infection took place, and the pustule began to rise at the usual period. On the eighth day the small-pox, which had raged with violence in the neighbourhood, and in some measure continued to prevail, began also to appear; threatening to be of a very confluent kind.

Soon, however, the disease began to assume a more

favourable aspect. The pocks began to turn yesterday, being only the seventh day; and at this time the patient seems to be perfectly free from danger. The vaccine pustule has run its usual course; and the areola is strongly marked. The small-pox is equally perfect; but has lost much of the virulence, which manifested itself at the commencement of that disease.

In the third part of his treatise, page 151, Dr. Jenner says, "In my first publication on this subject, I expressed an opinion that the small-pox and the Cow-pox were the same diseases under different modifications. In this opinion Dr. Woodville has concurred. The axiom of the immortal Hunter, that *two diseased actions cannot take place at the same time, in one and the same part*, will not be injured by the admission of this theory."

I have now before me that passage in Mr. Hunter's Treatise on the Venereal Disease, which relates to the subject now under discussion; and, in order to state his sentiments with the greater precision, quote his own words.

"The venereal disease is not only suspected to be present in many cases, where the nature of the disorder is not well marked; but it is supposed that it can be combined with other diseases, such as the itch and the scurvy. Thus we hear of pocky itch; and of scurvy and the venereal disease combined;

but this supposition appears to be founded in ignorance."

To me the meaning of this passage is not quite perspicuous. If Mr. Hunter only intended to convey an idea, that the venereal disease and the scurvy never hybridise, and form a *tertium quid*; I apprehend few medical practitioners will refuse their assent to his axiom. But on the contrary, if he meant to express an opinion, that those two diseases could not co-exist, there are few who cannot refute that opinion.

Mr. Hunter considered it as clear beyond a doubt, "that *no two actions* can take place in the same constitution, nor in the same part, at one and the same time." This is evidently proved to be an erroneous conclusion, by the cases related by Dr. Russell, which have already been cited.

He considered it as equally clear, that "*no two different fevers* can exist in the same constitution; nor *two local diseases* in the same part, at the same time." This conclusion also appears to me to be erroneous, from the contravening evidence before adduced.

He admits, that a man may have the lues and the small-pox at the same time. But he adds, "*If both were consequences of fever, and each followed the fever nearly about the same time, then it would be impossible*

for both to have their respective eruptions, even in different parts, at the same time; for it is impossible for the preceding fevers to have been co-existent."

Here it is manifest, that Mr. Hunter lays it down, *not only as a general rule*, but as a rule without exception, that the measles and the small-pox, or any other two febrile diseases, cannot co-exist. This position, or principle as he calls it, he endeavours to illustrate, and to prove, by reciting one of many cases which had fallen under his observation.

This was a case, where he had inoculated a child for the small-pox. Signs of infection appeared; but so slight, that on the twentieth and twenty-first days, when the child was feverish, Mr. Hunter declared it was not the variolous fever; as the inflammation had not at all advanced since the nineteenth.

On the twenty-second, a considerable eruption appeared, which was evidently the measles. The inflammation on the arms appeared retrograde. On the twenty-third, when the child was very full of the measles, the inflammation of the arms was stationary. On the twenty-fifth, the measles began to disappear. On the twenty-sixth and twenty-seventh, the inflammation of the punctures increased; on the twenty-ninth, a little matter was formed. On the thirtieth, fever commenced. From this time the disease proceeded in its regular course, and terminated favourably.

From this and other similar instances, Mr. Hunter was induced to believe, that whenever one infection had taken previous possession of the habit, any other which the patient might happen to receive, would always be suspended; and lie dormant, during the action of the first. Thus he converted into an invariable law of nature, what is only a general rule. Perhaps even this general rule is attended with more exceptions than most medical men are aware of. Dr. Rowley this day informed me, that about a week ago he saw a patient of Mr. Sandys at Kentish-town, who had been inoculated for the small-pox. Upon enquiring the particulars of Mr. Sandys, I find that the measles and the small-pox appeared on the same day, and that both eruptions went on together, to his great surprize.

Dr. Rowley also informed me, that a considerable number of cases of co-existence of the small-pox and measles, and sometimes of the hooping-cough also, had occurred in the Marybone Infirmary. This triple combination of diseases is of the same kind, as that which was communicated to me by Mr. Leighton.

So strongly was Mr. Hunter impressed with an opinion of the impossibility of such a complication of disorders, that he pronounced it absolutely impossible for two such diseases as the measles and small-pox, to have their respective eruptions, *even in different parts*, at the same time. Exclusive of the

two cases which contravene the major proposition of Mr. Hunter, *several* are alluded to, which contravene the minor proposition; for Dr. Russell says, that *several cases* were met with, in which the pustules of the small-pox were discovered on the face, before the measles on the limbs had totally disappeared.

One case of the co-existence of Cow-pox and small-pox occurred in my own practice, in a patient who lived at No. 42, Marybone-lane; in which the small-pox appeared on the third day. Another case occurred at the same house, where it appeared on the seventh day. In a case which happened at No. 11, Silver-street, the eruption of the small-pox took place on the eleventh day. In a case which occurred in Brook's Mews, Grosvenor-square, the small-pox appeared on the seventh day.

In a case which occurred at No. 2, Leigh-street, Red Lion-square, the small-pox began to appear on the sixth day. In a case where Mr. Newby inoculated a child, who had been exposed to variolous contagion about seven days, eight small variolous pustules appeared on the ninth day.

A case which happened in St. Thomas's Hospital, was communicated to me by Mr Cline. A woman had the natural small-pox; and "her child, whom she suckled, was inoculated with cow-pock matter, several days after the eruption had appeared on the

mother. On the tenth day the child had a few eruptions, which soon dried off."

Another case was communicated to me by Mr. Johnston, of Queen Ann-street East; in which the small-pox appeared on the eleventh day after the patient had been inoculated with Cow-pock matter; notwithstanding the pustule had been excited.

Mr. Massie, surgeon, of Newman-street, informs me, that he has frequently seen a co-existence of the small-pox and the measles.

Another case of the co-existence of eruptive diseases occurred in the practice of Mr. Kelson of Sevenoaks. A man whose wife laboured under the small-pox of the most confluent kind, applied to Mr. Kelson, requesting that he would inoculate him for the Cow-pox, with which Mr. Kelson complied, and desired to see him in three days; but the man did not come again to Mr. Kelson, till a week had elapsed, when he was inoculated a second time. This was on the tenth day from the time when the small-pox had appeared on his wife.

The second inoculation took place, and at the end of a week was so far advanced, as to give Mr. Kelson hopes of its superseding the small-pox. But he was soon convinced of the contrary; a considerable eruption appeared, which was truly variolous. The patient however, recovered; and Mr. Kelson asserts,

that the pustules turned much sooner than he had ever known them do, in a bad sort of small-pox.

This case gave rise to several false reports, which it is now scarcely necessary to detail. The correct statement which is here given, I was favoured with by Mr. Williams of Vere-street; who wrote to Mr. Kelson, to enquire into the truth of a rumour which he had heard. These vile fictions were at one time countenanced by a despicable cabal, who have undesignedly been instrumental in promoting a cause, which they endeavoured to injure; and have reason to repent the discussion which they provoked.

Among other falsehoods they propagated the following: that Dr. Jenner entertained doubts of the effect of the Cow-pox in preventing the small-pox; and that his own servant, whom he had inoculated for the Cow-pox, afterwards had the small-pox and died.

This report having been mentioned in different medical societies, with some degree of confidence, I wrote to Dr. Jenner, in order to know what credit it was entitled to; and received the following answer.

“ The whole of the assertion you heard at the Medical Society, respecting my entertaining doubts of the efficacy of the Cow-pox in preventing the small-pox, is *entirely false*; and must have been invented by some malevolent person, with a base design. The idea I ever entertained of the security of the

patient, has been strengthened by my late experiments. Many of those who were inoculated with variolous matter, have been subjected to the same test. Some have had sheets wrapped round them, in which those had lain, who had laboured under full burdens of the small-pox. Some have had the matter thrust up the nostrils; and others have been put into beds, with those who had the small-pox in its highest state of infection: but they all resisted its action."

Among other ill-founded reports which have been raised against vaccine inoculation, one was to the following effect: that a servant of Mr. Sneyd, who at that time resided at Weybridge, had the Cow-pox by inoculation, and afterwards the small-pox. The parents of a child whom I was desired to inoculate for the Cow-pox, having heard this report, I was referred to Mr. Blackaller, a surgeon of Weybridge; as a gentleman who knew the fact. Mr. Blackaller very politely returned the following answer.

" SIR,

" As I shall be exceedingly happy in any degree to do away the erroneous opinion many people have formed, to the prejudice of the Cow-pox; I beg leave to observe, that several persons in Weybridge were inoculated with vaccine, and afterwards with variolous matter; *but I know no instance, where the latter took effect after the former.*

I am, &c.

Weybridge, April 2, S. BLACKALLER."

1800.

Dr. Croft having informed me of a report, that Mr. Dundas of Richmond, Serjeant Surgeon to his Majesty, had lost a patient in the Cow-pox, I wrote to Mr. Dundas on the subject, and shall here subjoin his answer.

SIR,

“ I have the satisfaction to assure you, that not only I have not lost a patient in the Cow-pox; but that the child in question did not die under that disease. Being anxious, as I suppose you are, for the credit of the new inoculation, as soon as I heard the report of the death of this child, I made an enquiry concerning it, and was informed by Mr. Beauchamp, who attended it, that it was a child of Mr. Webb, about four months old; that it had been inoculated for the Cow-pox in town, by Mr. Knight; that it remained in town till the disease was over, and was then sent to Twickenham, where, at the distance of three weeks after inoculation, it was attacked with a disorder of the bowels, of which it died.

“ Mr. Knight, I am sure, will confirm the above account.—All those, whom I have inoculated, amounting to a considerable number, confirm the opinion, that this practice is likely to be of great benefit to mankind. I am, &c.

“ DAVID DUNDAS.”

In a letter which I since received from Mr. Dun-

das, he expresses his warmest approbation of the practice in the following terms.

“ I have inoculated a great number for the Cow-pox; and have not as yet met with one case attended with any troublesome symptoms. I advise every person to prefer it to the small-pox.”

To resume the history of publications on the subject of the Cow-pox;—in the Medical Journal for July, 1800, where different cases of the co-existence of eruptive diseases are to be met with, is an extract from the Journal de Paris, of Prarial 23d, (June 12th, 1800), giving an account of the introduction of vaccine inoculation into France. Five days previous to the date of this intelligence, thirty children were inoculated in Paris, with Cow-pock matter sent from England. Infection took place in nine of the number, at the time specified by Dr. Pearson and other members of the London Committee; who had declared they should be happy if it took place in one patient out of twenty.

In a postscript to the same number, the editors express their obligation to a country correspondent for his zeal in promoting this valuable improvement in the practice of medicine; and assure him that such paragraphs as he alludes to can never prevent the adoption of the practice; while it is supported by the opinions of some of the most eminent of

the medical profession, and countenanced by persons of the first rank in society.

About the month of June, 1800, a work on the same subject, was published by William Fermor, Esq. of Tusmore, in Oxfordshire. It is entitled “Reflections on the Cow-pox; illustrated by Cases, to prove it an absolute Security against the Small-pox.”

This gentleman, blest with the gifts of Fortune, but not corrupted by her allurements,—addicted, not to fashionable pleasures, but to philosophical pursuits, and actuated by motives of humanity, caused 326 persons to be inoculated with the Cow-pox by the Rev. Mr. Jenner; and 173 of them to be afterwards inoculated with variolous matter, by different medical practitioners in his neighbourhood.

These experiments, we are informed by Mr. Fermor, were conducted under the inspection of Dr. Wall, Sir Christopher Pegge, Dr. Williams, and other gentlemen of the University of Oxford and its environs, distinguished for their professional abilities; who, from the most liberal and humane motives, encouraged Mr. Fermor in his undertaking; and devoted much of their time to this very interesting and important subject.

Mr. Fermor states, that “during the course of

these experiments, upon so considerable a number of different subjects of all ages, from eleven days to seventy-five years, no pustule appeared on any of them, but on the inoculated part, except in two instances; a single pustule on the forehead of one, and one upon the arm of another.

“ No sickness of any consequence ensued; nor any loss of time from ordinary avocations. The disorder was not communicated by means of effluvia to any who refused to submit to inoculation. The symptoms which generally occurred were, a pain in the axilla, or in the head, sometimes in both; but no nausea, or other constitutional illness. Indeed some of them were entirely free from all the above complaints.”

“ An efflorescence generally appeared about the punctured part; and sometimes extended, though without pain, down the fore-arm and up to the shoulder: but this happened very seldom. No medicine was administered; nor had one of them an inflammation of the arm, that could create the least uneasiness.”

Whoever peruses Mr. Fermor's pamphlet, will find his labour amply repaid, by many valuable introductory remarks; a few of which I shall select.

He observes, that although “ the original virulence of this dreadful malady, and its fatal effects,

have of late years been considerably diminished, by the modern practice of inoculation, it does not appear that its contagious influence has been much abated; on the contrary, its universality has been much extended. It has compelled every individual to submit to inoculation, notwithstanding constitutional habits, and family complaints, may have rendered its good effects precarious. Nay, how few, parents are there, who have not had many anxious moments on account of the result; notwithstanding they have employed the most eminent in the profession, and the coolest mode of treatment?"

Mr. Fermor also remarks, that inoculation of the small-pox was attended with inconvenience on account of its requiring a sequestered spot. This, however, the bulk of the community could not comply with. He likewise adverts to the expence incurred by government for the inoculation of the army; and reminds the reader, how much the military have contributed to spread the disease; by communicating it to the inhabitants of the places they passed through, as well as to those amongst whom they afterwards resided.

He bids us reflect, " what an absence from duty was necessary for the soldier, during its progress, and what a diminution of bodily strength, even under its most favourable appearances! what considerable danger frequently arose from the intempe-

rance and misconduct of the patient; and how many lives were often lost by their fatal consequences!

Mr. Fermor coincides in the general opinion of those who have written on the Cow-pox; that it requires neither regimen, medicine, or absence from ordinary employments; that it is not infectious in the form of effluvia, and is decidedly proved to be an effectual preservative against the small-pox. Hence, both in a civil, and a national light, it is a discovery of the utmost importance.

He gives his own opinion, in which every ingenuous and well-informed reader must concur, that Dr. Jenner's own very valuable dissertations upon this complaint, and of its preventive powers against the contagion of the small-pox, ought to have been sufficient to convince every one, that the Cow-pox was a perfect security against the small-pox. "But," adds he, "so suspicious are men in general, of the prejudices which may arise in the most candid and enlightened mind, in favour of any important discoveries made by the publisher of them; that we are afraid in general, to take almost any thing upon trust, but what comes through the medium of others, who may appear to be less prejudiced, or less interested."

He avers, that where the well-being and even the life of man is concerned, no precaution, in reality, can be too great. This maxim, however, is wrested

from its true intent, by the weak, the prejudiced, and the ignorant; and made to serve as an excuse for their not adopting a practice, which is fraught with incalculable benefits to mankind.

Mr. Fermor considers Cow-pox and small-pox as synonymous terms: in this I cannot coincide; but I consider excess of caution and timidity as synonymous terms. Between the two extremes of timidity on one hand, and temerity on the other, lies discretion;—a word synonymous with prudence,—a word synonymous with true wisdom.

This happy medium, this golden mean, equally remote from rash experiment, and timorous perseverance in established rule, is what has always distinguished the judicious practitioner. Him, and him only, shall I ever account a good physician or a wise man, who is neither too fond of novelties, or antiquities, in his professional line; who, while he shews a due veneration for the traditions and experience of his predecessors, is not afraid of sometimes deviating from the beaten track.

Rectius vives, Licini, nec altum
Semper urgendo: neque, dum procellas
Cautus horrescis, nimium premendo
Littus iniquum.

This prudent line of conduct, equally distant from all extremes, is what distinguishes the celebrated character to whom we are indebted for this improve-

ment of the healing art; and what distinguishes the philosopher, whose reflections are the subject of this comment. They did not defer instituting experiments, or announcing the success of those experiments to the world, till it was proved that the Cow-pox was a never-failing preventive of the small-pox,—an idea which only shews the *ne plus ultra* of human folly;—but as soon as they were convinced of the utility of the practice, they recommended it to the public at large.

Before this question was agitated, I should have thought it an insult to the human understanding to suppose that any man would expect, that an exception would take place in favour of this, or any other particular doctrine; or that any one should be under an obligation to abandon a practice, unless he can demonstrate *à priori*, that it was infallible; unless he is able to convince the world, that no exception will ever occur, and unless he can prove a negative.

This is the modest expectation of the opponents of this practice. This is the reasonable demand of those, who maintain that we cannot be too cautious. I have even known persons who have contended, that we ought not to inoculate with vaccine matter, till we could clearly trace its origin.

To such persons it may be sufficient to answer, in the words of Mr. Fermor, that “the inhabitants of the banks of the Nile would be much to blame,

were they not to avail themselves of the fertilising qualities of its waters, because perhaps they are ignorant of the source from which they flow."

I have known a medical man so hardy as to contend, that we ought not to inoculate with vaccine virus, till we have found out a method of making infection always take place with certainty;—a condition never required of those, who inoculated for the small-pox. He might as well argue, that we should not go into the water, till we have learned to swim.

The same gentleman contends, that we ought not to inoculate for the Cow-pox, till we are all agreed on every point, among ourselves. To this we reply, that in the cardinal points we are all agreed; namely, in the safety and efficacy of the practice; and as to the rest, longer experience, and collision of sentiments, will, in time, strike out the truth.

In the mean while, it is neither by extreme caution, or extreme neglect of caution, that we can steer with a probability of success, amidst the rocks, the shoals, the whirlpools, and the quicksands of life; but, in order to shun a greater evil, we must often encounter the less.

Mr. Fermor remarks, that some people think the catalogue of disorders, which afflict the human race, is sufficient, without having resource to the brute creation for more. These persons are so igno-

rant as not to know, or so illiberal as not to confess, that the disease against which they so bitterly inveigh, will no longer trouble the human species, when they have no further occasion for its assistance.

We are informed by Mr. Fermor, that although he was much pleased with the decided opinion of Dr. Jenner, and many other able practitioners, that the genuine Cow-pox is a certain preservative against the contagion of the small-pox, yet he was determined to ascertain the fact. Accordingly, the small-pox matter was communicated, but communicated ineffectually, to more than half of his patients, who had been previously inoculated with the Cow-pox, and recovered from that complaint.

Mr. Fermor recommends to all practitioners, to be particularly careful in discriminating the true Cow-pox; otherwise they may be led into an error, from which the most fatal consequences may ensue. He gives us the characteristics of that distemper from Dr. Jenner; and assures us, he has good reason to believe that Dr. Jenner's opinion, concerning the original source of the disease, is well founded.

In order to shew the prophylactic power of the vaccine virus, Mr. Fermor has related several cases, selected from a considerable number which he could bring forward. These afford substantial evidence, that those who have had the Cow-pox are rendered

insusceptible of the small-pox; though inoculated a considerable time after, and at different periods.

In one instance, a man who had undergone the Cow-pox three years before, was inoculated several times with variolous matter, and remained in the house with patients labouring under the small-pox; yet could not receive the infection of that disease.

In another instance, a person who had the Cow-pox five or six and twenty years ago, was three times inoculated with the small-pox four years after, without effect. Two of his brothers, who had never had the Cow-pox, received the variolous infection. He slept with them, in order to catch the distemper, if possible; but in vain. He has, since that time, frequently been exposed to its contagion; and has very lately inoculated his children with the small-pox, without being infected.

In another case, the patient had the Cow-pox thirty-six years ago; and was inoculated four years after, but without effect. Nine years ago, his family were inoculated with the small-pox, and were infected: but he escaped, though he attended them the whole time. This case is a decisive proof, that the security against the small-pox, which the Cow-pox affords, is permanent.

In the fourth case, a person had the Cow-pox twenty-five years ago. "Eight or nine years after

that period, she nursed and slept with one of her children, who had the small-pox in the natural way; but no ill consequences ensued. She has since had the small-pox twice in her family; and was each time fully exposed to the contagious effluvia; but resisted infection."

The subject of the fifth case, after having had the Cow-pox six years, was inoculated for the small-pox at the Small-pox Hospital; and the same operation was repeated after the expiration of a fortnight, but without effect. Sixteen years after, he attended his own children, when labouring under that disease; but without receiving infection.

The sixth case which Mr. Fermor relates, is that of a person, who, ten years after he had the Cow-pox, was three times inoculated for the small-pox; but without effect. "After an interval of ten years more, he inoculated two of his children at his own house; and again, after a lapse of several years, he inoculated another child: but, though fully and frequently exposed to the contagion, he was not in any degree affected by it."

Mr. Fermor next produces several cases, to prove that the small-pox renders a person insusceptible of the Cow-pox. In a large farm, where the Cow-pox prevailed, the disorder was communicated universally to the servants who were employed in milking; but the three sons of the farmer, who had previously had

the small-pox, although they constantly milked the cows with the servants, totally escaped infection.

Mr. C. Collingridge, of Somerton, in the neighbourhood of Tusmore, who had successfully inoculated between two and three hundred persons with the Cow-pox, inoculated five patients who had previously had the small-pox. At the same time, and from the same arm, he inoculated ten others with the Cow-pox; nine of whom received infection. The arms of the five who had had the small-pox appeared at first rather inflamed; but the inflammation soon subsided, and left no marks of infection. Mr. Fermor thinks, that, from a perusal of the foregoing cases, the most prejudiced and sceptical person must allow, the genuine Cow-pox is a certain preservative against the small-pox.

To prevent any one from being lulled into an ill-grounded security of being insusceptible of the small-pox, Mr. Fermor strongly recommends to practitioners, to be well assured by ocular evidence, that their patients have received the vaccine infection. He remarks, that as the virus is of a much milder nature than that of the small-pox, it is often necessary to insert it more than once. He once saw it inserted six times, without producing infection.

At the time of writing this, I have inoculated near seven hundred; of whom three were inoculated five times, and one six times before infection took place.

This might arise, partly from the matter being sometimes deficient in strength, or in quantity; but, I believe, more commonly, from the constitution of the patient in whom it was inserted; since it was generally in children of a weak habit, that such a difficulty of producing infection was met with.

On account of this difficulty of communicating the vaccine infection, and the necessity of ascertaining whether it has succeeded or not, Mr. Fermor thinks, it is much to be wished, that the practice were to be confined to professional men only. He concludes with observing, that the Cow-pox is mild in its effects, congenial with every situation and employment of life, not contagious in any form but that of inoculation, and a certain preservation against the baneful influence of the small-pox: and, that to Dr. Jenner alone we shall be indebted, for the complete annihilation of this disease.

Soon after Mr. Fermor's Reflections were published, another work on the same subject appeared, entitled "Observations on Vaccination, or the Inoculated Cow-pox." The author of this work is Mr. Dunning, surgeon, of Plymouth-Dock.

Mr. Dunning severely censures the conduct of those, who, although they are entrusted with the health of the public, shew no inclination to ascertain the value of a practice, which promises to be one of the greatest blessings with which the world has at any

time been favoured, and to which our utmost hopes could never have aspired ; but seize every opportunity of starting doubts and difficulties, without taking the least trouble to remove them.

After noticing certain illiberal arts, practised by the opponents of this new species of inoculation, he informs us, that it was introduced into the neighbourhood of Plymouth by Dr. Remmett ; under whose direction Mr. Dunning inoculated a child, whose health was till that time so indifferent, and from the period of inoculation improved so rapidly, that the case proved particularly interesting, and encouraged Mr. Dunning to prosecute his enquiries with fresh ardour.

He contrasts the violent discipline, which is thought necessary, in order to prepare a patient for the small-pox, with the safe and easy method in which the practice of vaccine inoculation is accomplished. In the latter, no debilitating medicine, or regimen, is had recourse to ; nor is the patient exposed to a degree of cold which endangers life, or is likely to produce a scrophulous complaint, or a consumption.

Mr. Dunning adverts to the prejudicial custom of giving cathartics after the small-pox ; a custom I had before endeavoured to explode. I am happy to find an author of Mr. Dunning's talents and experience, who coincides in opinion with me, relative to that absurd practice ; which, I am perfectly convinced, is one of the most prolific sources of scrophula.

In respect to the inoculation of the Cow-pox, Mr. Dunning declares, that as far as his experience goes, it is a transaction so trifling in itself, that he is at a loss where to begin the description of it. After cautioning practitioners not to use a lancet that has been employed in the variolous inoculation, he recommends that the point of one, previously moistened with Cow-pock matter, should be carefully passed between the cuticle and the cutis, so as not to draw the smallest quantity of blood.

Mr. Dunning has inserted a communication from Mr. Little, containing a case of co-existence of Cow-pox and chicken-pox. On this occasion Mr. Little remarks, "it may be objected by some, that two diseased actions are not known to exist at the same time. This is true in general, I believe; but not always." This opinion, which I ventured to state in the Medical Journal since the commencement of the vaccine inoculation, has since been confirmed in a greater degree, than could reasonably have been expected in so short a time.

Mr. Little expresses his belief and hope, that when the prejudices now existing against the vaccine inoculation are removed, it will become universal. He is convinced, that in cases where the small-pox would be hazardous, on account of constitutional disease, the Cow-pox may be substituted with safety, and often with advantage. Two strong instances of this kind have fallen under his own observation.

Mr. Dunning says, that in the Cow-pox, "the progress of inflammation on the arm, for some days, and the duration of it, are nearly the same as in the inoculated small-pox." But he adds, that after six or seven days, there is a "difference, *much easier to be discovered than described*; but which," he thinks, "cannot easily be mistaken by any person accustomed to observation."

I was rather surprised at this remark; since the diagnostics are so clear, and so distinctly laid down by other writers on this subject.

In the Cow-pox, the pustule is regular, in the small-pox irregular; in the Cow-pox, the fluid continues pellucid, in the small-pox, it soon becomes opaque; in the Cow-pox, the centre is more depressed, in the small-pox, more elevated; and in the Cow-pox the scab is of a much darker colour than it is in the small-pox.

Mr. Dunning is apprehensive, that however large the pustule may be, if it is not surrounded with the usual efflorescence, or attended with apparent general indisposition, the necessary absorption, or influence, has not taken place. This, he owns, is opinion only; and acknowledges that he has at present no evidence to support it. I am happy to have it in my power to affirm, that I have known several cases, where there was a total absence of areola and of constitutional disease; yet in no one case of this kind have

I know the patient capable of receiving the infection of the small-pox.

Mr. Dunning seems to think that when a person has been exposed to the contagion of the natural small-pox, he will sicken, in general, about the twentieth day; and, that if he is inoculated with variolous matter as late as the tenth, inoculation will produce as mild a disease as usual, and perfectly supersede the natural infection.

In this respect Mr. Dunning's faith greatly exceeds mine. I am inclined to believe, from a number of instances, that in the natural small-pox, the patient commonly sickens in about a fortnight; and have seen so many disappointments occur, where those who were inoculated with variolous matter had been previously exposed to infection, that I think Mr. Dunning is much too sanguine in supposing inoculation can supersede the natural disease at so late a period.

Mr. Dunning doubts much, if the Cow-pock virus is capable of superseding variolous infection; even if employed twenty-four hours after exposure to malignant small-pox. This doubt is justified by cases which have been communicated to me, and which will be found recorded in the course of this work. He even thinks it hazardous to expose a person who is under vaccine inoculation to the contagion of the small-pox, before absorption has taken place. He

professes to have no experience to warrant any apprehension of danger from this cause. I humbly conceive, the records of vaccine inoculation teem with abundant proof of the danger of this kind of exposure; which induced me, near a twelvemonth before Mr. Dunning's Observations appeared, to inculcate the necessity of the same precaution.

I have, in a former part of this treatise, advanced sufficient proof, that the progress of the vaccine disease will not always be arrested, as Mr. Dunning appears to think, when a variolous eruption supervenes; and I regard it as a happy coincidence of circumstances, that the same era which produced a concurrence of hazardous experiments, should also have produced evidence of the concurrence of two eruptive diseases; and of two morbid actions in the same constitution, at the same time, not being incompatible. Thus, where we find the poison, we find its antidote. On this occasion, a greater number of cases in point,—cases which occurred in various parts of the world, and to persons between whom there could be no collusion,—have offered themselves to notice, than could well have been expected in so short a time.

——— *Quod optanti divom promittere nemo
Auderet, volvenda dies, en, attulit ultro!*

Mr. Dunning informs us, that although he himself was satisfied from the evidence already brought forward, that those who have had the Cow-pox are

secure from the small-pox; yet to satisfy some of his patients, he inoculated several of them with the most active variolous matter which he was able to procure; and exposed them and others, by every means which he could imagine, to the fullest influence of the natural infection.

Mr. Dunning was of opinion, that the natural Cow-pox had not hitherto been discovered in Devonshire. He therefore inserted in his publication, a letter from the Rev. Mr. Smith, of St. Budeaux, in that county; stating, that the genuine disease made its appearance at Offord, three miles from Plymouth, about thirty years ago. Ann Stuttaford, wife of the clerk of Mr. Smith's parish of Sampford Spiney, at that time lived as a servant in a dairy farm at Offord; and was employed, with two other women, in milking her master's cows. She was the only person of the three who had never had the small-pox; and was the only one who caught the Cow-pox.

Since that time, she has lived in houses where the small-pox has been, and sometimes has terminated fatally; yet she has always escaped infection. These instances have occurred so frequently, that her apprehensions of having the small-pox are now wholly done away.

To show in the stronger light the efficacy of this prophylactic, Mr. Smith remarks, that "as she is remarkable for a gentle, humane, and benevolent

disposition, she often visits persons in the small-pox; and voluntarily gives them all the assistance she can."

Mr. Dunning was mistaken in supposing, that the Cow-pox had not been detected in Devonshire. The contrary is asserted by Dr. Pearson and others; and was confirmed to me by Sir G. Baker; who received communications on the subject from that county, as well as from Somersetshire, and Dorsetshire, many years ago. Nevertheless, we are much indebted to Mr. Dunning and his correspondent, for this valuable contribution; this additional proof of the singular efficacy of the vaccine disease, in resisting the infection of the small-pox.

In the course of the last summer, Mr. Simpson heard of a case of this kind, during an excursion in Devonshire; and desired Mr. Pawning, who lives near Tavistock, and who had mentioned the case to him, to send him a letter with the particulars. The letter which he received in consequence from Mr. Pawning, he did me the favour to communicate to me. Upon referring to it, I find, that it relates to the same person, whose case has already been published by Mr. Dunning; whose account it amply confirms.

After observing, that the first mention of the small-pox and measles is, as far as he recollects, in the writings of the Arabian physicians, Rhases and some others, who flourished about the fifth century, Mr.

Dunning expresses a suspicion, that it may have originated from some brute animal, and be no less deserving of the foolish taunts of prejudice and conceit, than the Cow-pox.

Mr. Dunning having requested Dr. Jenner to give his opinion, whether the swine and chicken pox derive their origin from the animals whose names they bear, Dr. Jenner informed him, that “in hot climates, particularly the East Indies, the domestic poultry are subject to an eruptive disease so similar to the small-pox, that the natives of Bengal distinguish it by the same name,—*gooty*. It is contagious among the poultry; and commonly fatal. Inoculation has been practised, to lessen the evil; but in vain.”

This intelligence was communicated to Dr. Jenner by a gentleman, who was long a resident in Bengal. Dr. Jenner says, he believes Mr. Dunning will find on enquiry, that the poultry in the West, as well as the East Indies, are subject to eruptions.

Mr. Dunning tells us, that in order to conduct his investigation of the subject he had undertaken, with impartiality, he had not only paid attention to those circumstances which were favourable to the reputation of the Cow-pox; but had diligently scrutinized such unfavourable reports as were circulated in his neighbourhood; every one of which proved to be totally destitute of foundation.

The cases which were related at Guy's Hospital, and which Mr. Dunning alludes to, bear more resemblance to the small-pox than to the Cow-pox. No one who has the least idea of the Cow-pox will for a moment allow, that twelve persons, the whole of those inoculated at one time, were likely to have considerable constitutional affections, such as fever and eruptions; or, that what never failed in a single instance, in any other hands, should fail so much in the hands of Mr. Robinson. In short, the anecdote has had its day. It is, like the matter which gave rise to it, rather too stale to produce a proper effect.

Mr. Dunning concludes his work with remarking, that, although Dr. Jenner had the subject of Cow-pox before him several years, and had investigated it with much cautious, cool, and deliberate experiment, before he announced it publicly to the world; yet it was justifiable, in that stage of the business, to entertain doubts and fears, and commendable to urge them. But, when two years had elapsed, since Dr. Jenner had communicated his observations, and those observations had been confirmed by the accumulation of much additional evidence, those doubts and fears ought to have given place to some degree of confidence; and to a fair trial of a practice, the object of which is, to annihilate one of the worst diseases, that afflict the human race.

He adds, that if, from such a persuasion, the conduct of those practitioners who have continued mere

idle lookers on, is little less than criminal, what must we think of those, whose efforts to depreciate the practice have kept pace with its growing reputation? What must be thought of those, who have endeavoured by the most vile and despicable attempts, to render abortive a plan, which promises to preserve many thousands of lives now in existence, and to entail the same advantage on every future generation, to the latest period of time.

Mr. Dunning is of opinion, that such an assassin should be held up to public disgrace, that such a monster should be driven from the pale of society. It must, however, be recollected, that *ignorance* will cover a multitude of sins. If this excuse be wanting, “a *Conscious View*” of the injury done to society, will not fail to inflict a condign punishment on the base offender.

In one opinion Mr. Dunning is rather singular. In page 112, he says, the variolous matter is most active when it is most purulent, when it is absolutely pus. In this respect, he differs from medical men in general; who think it most active when it is a mere lymph, and inert as it becomes more opaque, and purulent; on which account, it has been the general custom, to take variolous matter for inoculation as early as possible, after the appearance of the disease.

Dr. Jenner informs us, that vaccine matter, taken in a purulent state from the nipple of a cow, and

inserted into the arms of four or five persons, failed in every instance; yet all these persons were infected a month afterwards. He then asks, “Is *pure pus*, though contained in a small-pox pustule, ever capable of producing the small-pox perfectly? I suspect it is not.—Let us consider that it is always preceded by the limpid fluid, which, in constitutions susceptible of the variolous contagion, is always infectious; and though on opening a pustule, its contents may appear perfectly purulent, yet a given quantity of the limpid fluid may at the same time be blended with it; though it would be imperceptible to the only test of our senses, the eye. The presence then of this fluid, or its mechanical diffusion through pus, may at all times render active, what is apparently *mere pus*; while its total absence, as in stale pustules, may be attended with the imperfect effects we have seen.”

In the Medical Journal, and the Medical Review, for July, 1800, was published, a Testimonial in favour of the Cow-pox, signed by a number of physicians and surgeons; of which I shall here give a copy; adding such other names as have since been signed,

It was observed by Mr. Fermor, that we are in general afraid to trust to the evidence of any author, concerning the merits of a discovery made by himself. This motive had induced me to propose a declaration for the signature of medical men, pre-

vious to the publication of Mr. Fermor's treatise. It has been signed by a considerable number of physicians and surgeons in London and its vicinity; and we have the pleasure of seeing others in every part of the kingdom, follow their example. This must confound the enemies of the new practice; which promises such advantage to society; and secure the triumph of reason over the scruples of prejudice and ignorance, and the base manœuvres of sordid and self-interested men.

Copy of a Testimonial in favour of vaccine inoculation.

Many unfounded reports having been circulated, which have a tendency to prejudice the public against the inoculation of the Cow-pox; we, the undersigned physicians and surgeons, think it our duty to declare our opinion, that those persons who have had the Cow-pox, are perfectly secure from the future infection of the small-pox.

We also declare, that the inoculated Cow-pox is a much milder and safer disease, than the inoculated small-pox.

William Saunders, M.D.	James Sims, M.D.
Matthew Baillie, M.D.	John Sims, M.D.
Henry Vaughan, M.D.	Gilbert Blanc, M.D.
Maxwell Garthshore, M.D.	William Lister, M.D.
J. C. Lettsom, M.D.	Robert Willan, M.D.
Nathaniel Hulme, M.D.	William Blackburne, M.D.

J. M. Hayes, M.D.	Michael Underwood, M.D.
Andrew Thynne, M.D.	John Squire, M.D.
C. Stanger, M.D.	Richard Croft, M.D.
Edward Fryer, M.D.	R. J. Thornton, M.D.
Alexander Chrichton, M.D.	Robert Batty, M.D.
Thomas Bradley, M.D.	Thomas Garnett, M.D.
Sayer Walker, M.D.	John Gibson, M.D.
Richard Dennison, M.D.	Robert Hooper, M.D.
Thomas Denman, M.D.	Edward Bancroft, M.D.
W. G. Maton, M.D.	Lewis Poignand, M.D.

SURGEONS.

John Abernethy,	William Lynn,
William Blair,	John Mackinder,
G. M. Burrows,	Jonas Malden,
Samuel Chilver,	William Massie,
Henry Cline,	Joseph Millington,
A. P. Cooper,	James Moore,
David Dundas,	William Morris,
Thomas Farquhar,	Thomas Paytherus,
Henry Fearon,	John Pearson,
Edward Ford,	J. W. Phipps,
James Gilder,	Thomas Pole,
J. M. Good,	John Ring,
John Griffiths,	Thomas Rolph,
James Higgins,	John Rush,
James Horsford,	Thomas Seagrum,
Joseph Hurlock,	James Simpson,
Francis Knight,	H. L. Thomas,
Edward Leese,	Jonathan Wathen,
Lewis Leese,	Thomas Whateley,
James Leighton,	Stephen Woolriche.

In the Medical Review for the same month is a letter, of which the following is a copy.

To the Editors of the London Medical Review and Magazine.

"GENTLEMEN,

"On a former occasion I expressed an opinion on the subject of Cow-pox, which you have communicated to the world through the channel of your widely-diffused magazine. Permit me to offer a few additional observations, which recent occurrences seem to demand.

"If I had at that time entertained a doubt of the cases alluded to by Mr. Blair being variolous, that doubt would have been perfectly removed by subsequent events. Three instances have lately come within my knowledge, where the small-pox took place in consequence of the insertion of matter, received as Cow-pock matter from the Small-pox Hospital.

"About six weeks ago, Dr. Jenner asked me to meet, at his house, Dr. Aubert; who was sent to England by the national Institute of France, in order to learn the nature of vaccine inoculation; and has been attending the Small-pox Hospital a considerable time for that purpose.

"Having then heard of two of the instances, where variolous, instead of vaccine matter, had been received from that hospital, I requested of Dr. Aubert to mention it to Dr. Woodville; which he promised to do, and politely thanked me for the information.

“ Two days ago, Mr. Simpson shewed me a severe case of small-pox, occasioned by a gentleman having inoculated the patient with what was sent from the Small-pox Hospital as Cow-pock matter. In this case, not the least vestige of the Cow-pox is to be seen.

“ Mr. Blair’s paper on the subject of eruptions resembling the small-pox, and my remarks on that paper, have already appeared in this work (see the last three numbers of the London Medical Review); and as the work is very generally read, and the subject new and interesting, particularly to those who are much engaged in the practice of inoculation, I concluded that my remarks would not escape the eye of Dr. Woodville.

“ In this respect, however, I have been disappointed; for in a pamphlet just published, entitled, “ Observations on the Cow-pox,” when speaking of the *hospital matter*, he says,

“ I have now, I presume said enough to convince the reader, that Dr. Jenner’s supposition is directly incompatible with established facts; and I hope, in future, he will do the hospital matter the justice to speak of it as it deserves. It has been employed by many medical gentlemen, both in London and in the country; and *I do not know of one instance in which it has not fully answered the utmost expectations of the inoculator.*”

“ What was my surprise at reading this paragraph, when not only the medical and miscellaneous journals and magazines, but the weekly and daily prints, have noticed the circumstance of considerable pustulary eruptions, produced by matter obtained from the Small-pox Hospital! when the pamphlets written on the Cow-pox alluded to that circumstance! and when it has long been a common topic of conversation, both in private companies, and at all the medical societies in London!

“ From the description of the proposed substitute for the small-pox given by Dr. Jenner, we were justified in expecting *a mild disease*; totally unlike that which, we since know, has been engendered at the Small-pox Hospital. In this respect, the disease produced by the matter obtained from that hospital has disappointed us; but, as a security against the small-pox, it might well answer our utmost expectations; for it is well known, that a person very seldom has the small-pox more than once. I have from the first been of opinion with Dr. Denman, that the Small-pox Hospital was the last place in the world, where the Cow-pock inoculation should have been practised, unless we wished to bring it into disgrace.

“ When I applied to Dr. Pearson for vaccine matter, I understood he had taken it from the cow. At the time of inserting it, I was informed that what he brought with him came from Dr. Woodville; not

being able to take sufficient from his own patients to supply the increasing demand.

“ Dr. Woodville admits, that the pustular eruptions produced in the cases at the Small-pox Hospital, “have been, and still continue to be, the effect of some adventitious cause independent of the Cow-pox.” He affirms, that in his own practice out of the hospital, as well as in the practice of several medical gentlemen, whom he had supplied with vaccine matter, the Cow-pox uniformly appeared *in its mildest form*; and was *never attended with eruptions*. In this respect I cannot help entertaining a different opinion from Dr. Woodville; having seen patients who had been inoculated by him, and others who had been inoculated with matter received from him, whose arms exhibited the vaccine pustule, while other parts of the body exhibited pustules resembling the small-pox.

“ It is not difficult to conceive, how patients inoculated at the Small-pox Hospital should catch the small-pox; it is rather difficult to imagine, how they should escape that infection. Dr. Woodville endeavours to refute the opinion, that the Cow-pock matter used at the hospital was contaminated with that of the small-pox; and tells us, that he had not long practised the vaccine inoculation in that place, before he began “to suspect that there existed some peculiar cause, which rendered the patients under the vaccine inoculation in the hospital *more liable to pustules* than others.” He adds, that he has since been fully

convinced by daily experience, that this suspicion is well founded.

“ Rejecting the opinion that the matter was contaminated, he says, the only cause remaining, to which the frequent occurrence of pustules on patients inoculated in the hospital can rationally be referred, “ is the variolated atmosphere of the hospital,” which they were necessarily obliged to inspire during the progress of the Cow-pox infection.

“ To confirm his opinion, he remarks, that in the practice of Mr. Evans of Ketley, more than half of the vaccine patients who were exposed to the variolous effluvia had pustules.

“ That a variolated atmosphere should produce a variolous eruption, is neither strange nor new. Dr. Woodville suspects, that in those places where the small-pox is epidemic, the Cow-pox will be as liable to excite pustules as in the hospital; and brings an instance to justify his suspicion. But, is it not more reasonable to ascribe the pustules which resemble the small-pox to the action of the variolous matter, in cases where that matter is known to exist, whether floating in the atmosphere or fixed on the point of a lancet, than to say, that where the *small-pox* prevails, the *Cow-pox* excites pustules?

“ That the vaccine inoculation will not always supersede the variolous infection, I can, if necessary,

bring abundant proof; contrary to the idea entertained by Dr. Woodville, when he published his former "Reports" on this subject. This is a sufficient reason why those who are inoculated for the *Cow-pox*, should not be *compelled*, nor even *suffered*, to breathe an atmosphere polluted by the *small-pox*.

" No confinement, and of course no hospital, is necessary for that disease, if indeed it deserves the name of a disease; and were an hospital necessary for those who wish to shun the *small pox*, the *Small-pox Hospital* is the last to which they should be sent.

" The question under consideration is of no small importance. By the present mode of practice, those persons who are inoculated for the Cow pox are unnecessarily exposed to the small-pox; to which *one* of them has already fallen a victim. This, it is true, was not immured in the hospital, but inoculated there with the hospital matter; and we shall endeavour in vain to stop the ravages of the small-pox, while it continues to issue in disguise from that polluted source.

" From that centre it has lately radiated in three, and perhaps in many more, directions; but I hope, ere long, some remedy will be found for this grievance. That vaccine and variolous matter may be blended, and at one time produce the Cow-pox, at another the small-pox, appears evident from the cases published by Mr. Kelson.

“ I have now inoculated above two hundred persons with vaccine matter, since I communicated to Dr. Pearson the case he has published, without producing pustules resembling the small-pox. This proves, that where pure vaccine matter is used, varioliform pustules are, at least, an unfrequent occurrence.

“ Permit me to offer a few remarks on the origin of the disease under consideration. It appears, that the Editors of this Review are not convinced of its being yet ascertained, from the evidence which I laid before them in their last number. It will be sufficient for me to remark, that other proofs are not wanting, which will probably be published in due time by Dr. Jenner himself.

“ One circumstance I shall mention, which is this: Mr. Tanner, when foiled, as others had been, in attempting to produce the Cow-pox by inoculating the teats of the cow with a lancet, had recourse to another expedient. He removed a scab, that had been formed on a sore, occasioned by some accident; and having rubbed on this broad surface some newly-secreted matter of grease, he succeeded in exciting the disease.

“ Whatever may be the origin of vaccine virus, it must give every friend to the interests of humanity peculiar pleasure to contemplate its end. The feeble opposition which the practice has met with,

only serves to stimulate its advocates to new exertions, and to gain additional testimonies in its favour. It may now be considered as completely established: and I hope, and trust, it will be one of the first acts of the first Imperial Parliament of the British Isles, to bestow an adequate reward, if it can bestow an adequate reward, on that distinguished character, to whom, under divine Providence, we are indebted for this blessing.

“ I am, with great respect, Gentlemen,

“ Your most obedient servant,

“ *New Street, Hanover Square,*
July 16, 1800.

“ JOHN RING.

“ *P.S.* Mr. Simpson informs me, that Mr. Jordan has two other patients, together with that which he shewed me, at this time labouring under the small-pox, occasioned by matter obtained at the Small-pox Hospital, as vaccine matter.”

In the same number is Mr. Malim's case, which is similar to several others that had occurred before; and which gave rise to the observations contained in my paper. This paper was in the hands of the editors, a week before I was informed of Mr. Malim's case. That case could not have excited surprise in the mind of any one, who was not biassed by some erroneous theory; and taught to believe, that if a person was infected with the small-pox, the Cow-pox would never take place.

In the Medical Review for August, is a communication from Mr. Rowlands, of Chester; in which he says, *it is almost needless to say any thing on the great advantage of vaccine inoculation.* Mr. Rowlands, however, adds his testimony in its favour.

Such was the effect of the declaration which I have here inserted, together with the other very respectable testimonies in its favour, which had been before published. When the physicians and surgeons, whose names I have already mentioned, signed that declaration, they signed the death-warrant of the small-pox. —The “*Conscious,*” not *conscientious* “*View,*” may be considered as its last dying speech and confession.

In the Medical Journal for August, is a letter from Dr. Juncker, Professor of Medicine in the University of Halle, to Dr. Pearson; in which he gives an account of the proceedings of an institution, formed in consequence of the dreadful ravages of the small-pox in 1791; occasioned by rash and promiscuous inoculation; and a neglect of the precautions which are necessary, to prevent the propagation of the disease in the natural way.

He requests Dr. Pearson to send him an account “*of the remedies which are opposed to the spreading of this poison, either by the force of law, or the advice of physicians.*”

I know not any restraint, hitherto imposed on

inoculation of the small-pox in this kingdom, yet, when it is evident, that it no longer tends to alleviate, but is calculated in the highest degree to aggravate, the sum of human misery, we may be permitted to hope, that the wisdom of the legislature will at length say, "hitherto shalt thou go, and no further."

Dr. Juncker desires Dr. Pearson to send him some Cow-pock matter, that he may be enabled to introduce the vaccine practice in his own country.

In the Medical Review for September, is the following communication.

To the Editors of the London Medical Review and Magazine.

"GENTLEMEN,

"In your seventeenth Number you inserted, at my request, some remarks tending to prove that vaccine matter is sometimes variolated at the Small-pox Hospital; and that matter disposed of as Cow-pock matter at the Small-pox Hospital had in several cases produced the small-pox. I have since heard of three additional instances where such matter was received from the same quarter. This shews that much greater caution is necessary in the practice of vaccine inoculation than has hitherto been used.

"Since writing my last remarks, I have made fur-

ther enquiries concerning a case at Woolwich; and am authorised by my correspondent to say, that Dr. Irwin gave a clean lancet to Dr. Woodville, requesting him to arm it with pure vaccine matter. With this lancet when returned, the Doctor inoculated an officer's child, the first who was inoculated with supposed vaccine matter at Woolwich; and produced a case of small-pox, attended with considerable danger.

“ This inclines me to believe, that the matter employed by Dr. Woodville is not so pure as he imagines; and although, by his prudent manner of taking it, and avoiding secondary pustules, much of the virulence of the matter is lost, yet it will occasionally shew itself again :

“ *Naturam expellas furcâ, tamen usque recurret.*

“ One other point deserves consideration. Is it of advantage to the public, that any species of inoculation should still be practised at the Small-pox Hospital? For my own part, I must confess, that, however useful it has heretofore been in that respect, its utility ceased on the introduction of the new practice by Dr. Jenner. Either that Augæan stable ought to be cleansed, or to serve as a mere pest-house for the reception of such as are seized with the natural small-pox. It was not designed to propagate that disease, nor to disseminate a deadly poison.

“ I have been informed, that the inoculation of the small-pox has been discontinued at the Small-pox Hospital above three months; yet -I have known the disorder produced by inoculation at that place within this period, and a child in the same house infected thereby. This reduces us to the dilemma of concluding, that the report of the professed discontinuance of inoculation for the small-pox at the Hospital is premature; or that the vaccine matter is become variolated, and sometimes engenders that dreadful disease.

“ In either case the effect will be the same, in a certain degree; and wherever we lop off one head of the hydra, two or more may spring up. Thus all our efforts to extinguish the dire pest may be frustrated; and that structure which was intended as a receptacle for those labouring under a baneful distemper, may, either through accident or error, become a reservoir for the virus, and a fruitful source of contagion.

“ As one reason for the necessity of greater caution in the inoculation of the Cow-pox, I stated that this disease will not always supersede the small-pox; contrary to the opinion of Dr. Woodville when he published his first pamphlet. This opinion, it is true, is not directly expressed; but, I apprehend, it is clearly implied in his pamphlet. He there states, as a reason for his inoculating some of his patients with variolous matter, who were also under inoculation of the Cow-

pox, that several of them were so circumstanced, as to be constantly exposed to the infection of the small-pox. This, he says, he did, on account of his "having then had no proofs, that the progress of the infection of the former would supersede that of the latter."

"From this expression, and from Dr. Woodville's having since discontinued the precaution, although the same cause in a certain degree still existed, it is no unfair inference to conclude, that he supposes the progress of the Cow-pock infection will always supersede that of the small-pox.

"That the Cow-pox will always prevent the small-pox, when had recourse to in time, we have great reason to believe; that it often supersedes it, appears to me probable, from a number of instances that have fallen under my observation; but that it will not always supersede it, I asserted in my former communications, and could, if necessary, bring abundant proof.

"Three instances, where it failed to produce this happy effect, had then occurred in the practice of a gentleman to whom I had given vaccine matter; one of which I had seen. Another occurred to the same practitioner since that time. The subjects were paupers in a workhouse. They had been in the house from one day to a week, at the times of their respective inoculations. The small-pox raged both

within and without the walls of that house; so that no certain inference can be drawn with respect to the time, after which the vaccine cannot supersede the variolous infection.

“ In two of these, the small-pox appeared when the Cow-pox was at its height; in the other two, not till the termination of that disease. In one case of each description the small-pox proved fatal; but even this fatality was less than that which had prevailed previous to the introduction of vaccine inoculation into the house; where, till that period, on account of the heat of the weather, and an unwholesome atmosphere, scarcely one had recovered.

“ I have inoculated a considerable number of persons, who had been unavoidably exposed to the infection of the small-pox; in all of which, except two or three, it either prevented or superseded that disorder. In one of those cases, which happened in a girl about eight years of age, on the fourth day of the vaccine inoculation, a mild species of small-pox took place; but in another instance, where the subject was a labouring man, advancing in years, an eruption of the small-pox appeared on the eighth day, which proved fatal. In a third instance, the patient escaped all indisposition; but at the expiration of a month from the time of inoculation of the Cow-pox, had a pustule bearing every characteristic of the small-pox.

“ To shew how difficult it is to determine in what

cases the Cow-pox can supersede the small-pox, it will be sufficient to observe, that, as far as the nature of those cases would allow us to ascertain, it has been known to fail, where the patient has been exposed to variolous infection only a single day; and to succeed with such as have been exposed a much greater length of time. Upon the whole, however, where it has not succeeded, it has not appeared to me to be attended with the least detriment; nor can I doubt, that what has a tendency to prevent has also a tendency to mitigate the disease, when it has already taken place in the constitution.

“ On the 23d of last month, Dr. Baillie and Mr. Wilson did me the favour to inform me of Mr. Malim’s case. I then mentioned to those gentlemen, that I had known similar cases; and had written a paper on the subject, which had been for the space of some weeks in the hands of the editors of this work. This is no argument against the practice of vaccine inoculation, but against a delay of that practice; and ought to be sufficient warning to every medical man, not to expose his patients to an atmosphere polluted by the small-pox, till by virtue of that inestimable prophylactic, the Cow-pox, they are rendered insusceptible of its contagion.

“ I am, Gentlemen,

“ Your most obedient servant,

“ JOHN RING.”

“ *New Street, Hanover Square,*

August 24, 1800.

In the Medical Journal for October, 1800, is a letter from Mr. Leese on the subject of the vaccine disease; the contents of which he did me the favour in some measure to communicate to me, previous to publication. To the opinions there expressed I cannot altogether subscribe, though I entertain the most sincere respect for the author.

Mr. Leese first informs us, that the testimony of many respectable practitioners, and his own experience, have convinced him, that the Cow-pox is less violent, and less dangerous, than the small-pox in its mildest form; and that it is a sure preventive of the small-pox, if resorted to previous to variolous infection. So far there can be no diversity of sentiment, but among those who are ignorant of the real nature of the vaccine disease.

In the most essential points, therefore, the friends of the new practice are all agreed. But in those of less importance, a shade of difference in opinion still prevails, which can only be removed by length of time.

Of this nature is the hypothesis which Mr. Leese has formed, from an insufficient number of facts, respecting the power of the Cow-pox in superseding the small-pox.—On the 2d day of the month, a patient was attacked with fever; and on the 4th the variolous eruption appeared. On the 6th, two persons in the same house, who had not had the

small-pox, were inoculated with Cow-pock matter. In one of them, the arm shewed signs of infection on the fourth day of inoculation; but in the other, not till the sixth. The first totally escaped eruption; but the second had a pustule on the leg; which was broken early, so that Mr. Leese could not ascertain its real character.

In another person, who was inoculated with vaccine matter a day later than the two former, infection also took place, but more slowly; and the small-pox, supervening, produced a copious eruption.

Mr. Leese justly remarks, that it is not easy to determine, at what period the small-pox begins to be infectious. It must also be recollected, that the infection, in the early period of the disease, is so slight, and increases so gradually and insensibly, that nothing is more common than for persons to be exposed to it with impunity. Nor must it be forgotten, that this contagion is not like the venom of a serpent; and produces no immediate effects on the constitution.

Mr. Leese is of opinion, that the small-pox is infectious previous to the eruption; and, that if this opinion be correct, he shall be able to prove from the foregoing cases, that the Cow-pox has a power of superseding variolous infection, when it has been received within the space of two or three days.

That it is ever possible to supersede it, is difficult, if not impossible, to prove. If it is superseded, no positive evidence of its having existed can be adduced: and, according to the well-known rule of logic, *De non apparentibus et non existentibus eadem est ratio.*

When we consider, how frequently persons are exposed to variolous contagion, without effect, we must at least acknowledge, that a great number of corresponding facts, and a vast accumulation of evidence, are necessary, to prove that one infection supersedes another.

In the present instances, I humbly conceive, we have no certain reason to conclude, that the variolous infection was totally superseded in a single instance. In one, the small-pox was evident. In another, probable, though slight; and in the other, the febrile symptoms were protracted beyond the usual time of their duration in the vaccine disease.

The preceding remarks are the result of extensive observation, and profound reflection. Having repeatedly known cases, where the vaccine inoculation, though effectual in producing the disease, proved ineffectual either to extinguish the recent infection of the small-pox; and others, where it was unable in its early period, to prevent the variolous infection from taking place, when the patient was exposed to it, in

the first days of vaccine inoculation, I deem it a sacred duty to warn every practitioner of these impending dangers.

This is the more necessary, on account of an idea having prevailed, that provided a person was about to be inoculated for the Cow-pox, there was no danger in exposing him, for a few days, to the contagion of the small-pox: an error, which may be attended with the most fatal consequence to the patient, and bring disgrace on the practice.

Mr. Leese observes, that although the general opinion of *the most discerning* of the profession, as well as of the public, now preponderates in favour of the new disease, yet he trusts he shall not be accused of supererogation, if he endeavours to throw his mite into the scale.—Such a testimony cannot but add great weight to the cause; and must be highly flattering, to those who know the respectability of the character, from whom they proceed.

The next article in the same Journal, is a letter from Dr. Wilson, of Montrose; who also bears honourable testimony to the new practice.

“ If,” says he, “ the information of an individual practitioner, far removed from the metropolis, can add any thing to *the very high medical authority*, with which you have favoured the public, on the subject

of vaccine inoculation, my testimony is very much at your service. It may serve, in some measure, to ascertain the progress of that very useful discovery, all over this island."

He then relates, that in the month of July last, during the warmest weather, the confluent small-pox appeared in his neighbourhood. In consequence of which, the children of some of the first families in that part of the kingdom were inoculated with the Cow-pox, with the most complete success; and when Dr. Wilson wrote his letter, the practice was becoming general in that district.

The practice had long before been introduced into Scotland. The physicians and surgeons of that country, with that zeal for the improvement of medical science for which they have long been distinguished, were among the first to avail themselves of the valuable discovery of Dr. Jenner. As it would exceed the limits proposed for this treatise to enter into farther particulars, I refer such readers as wish for more minute information, to that inestimable treasure of medical intelligence, the *Annals of Medicine*, a continuation of the *Medical Commentaries*, published by Dr. Duncan.

In a subsequent part of the same number of the *Journal*, we meet with another communication from Dr. Huggan; who will not allow that the small-pox

can supervene the Cow-pox, as Mr. Malim had stated; and thinks those persons *weak*, who can suppose such an occurrence *probable*, or even *possible*.

I must confess myself one of those who were so *weak*; and have no great reason to be ashamed of my error, if it was an error; since it was committed by me, in conjunction with some of the most distinguished characters of the medical profession.

The case, however, as I have before stated, in the course of this dissertation, was neither new, nor singular. Several of the same kind had fallen within my observation, a short time before that of Mr. Malim took place; of which I not only had informed Dr. Jenner, Mr. Cline, and other eminent men; but sent an account of the fact to the editors of the Medical Review.

Dr. Huggan does not recollect to have seen or heard of the Cow-pox, in infants, being accompanied with sickness, white tongue, nor even much increased heat; nor has he ever perceived any enlargement in the axilla. It is, however, probable, that in the course of his practice, he will occasionally perceive all these symptoms; as I have done.

The Rev. Mr. Finch, in his account of the disease, published in a former number of the same journal, remarks, that some of his patients who were old enough to describe their indisposition, were affected

with *thirst* and chilliness; generally on the evening of the fourth day.

He also informs us, that “some infants at the breast were a little tedious, for two or three hours, on the same day, or the day after; and, during this time, *made repeated efforts to suck*; and then, upon tasting the milk, as repeatedly declined it.” May not the avidity for the breast be considered as an indication of thirst, and their dislike to the taste of the milk as a sign of nausea?

Besides, we are told, that “at this stage, their mouth and breath were hotter than usual; and a little cold *water, or cold milk and water*, satisfied them best.” How was it possible for infants to express a sense of thirst in more intelligible terms? He also tells us, that “*a few subjects were sick and vomited.*” A white tongue, and much increased heat, are also sometimes met with in this disease; but may not be occasioned by the vaccine contagion alone. They may be produced, either by catching cold, by dentition, or any other cause.

Dr. Huggan observes, that with the above case, “the editors of the magazine in which it appeared, have very properly contrasted a copy of the Testimonial in favour of the Vaccine Inoculation, which has been signed by so many respectable practitioners in London; to which,” he adds, “any further individual testimony in its favour is now quite unnecessary.”

Such is the language, in which the new practice is now spoken of. Thus it appears, from the united testimonies of all the respectable part of the profession, who have either published an opinion on the subject, or by their silence acquiesced in that opinion, till they are enabled by sufficient experience to form their own,—that the vaccine inoculation is no visionary scheme, but a practice pregnant with inexpressible benefits to mankind.

The declaration in its favour has gratified the most sanguine expectations; as the rapid increase of proselytes, and insatiable demand for vaccine virus, fully prove. That declaration has given confidence to the medical profession, and to the public.—It is a tower of strength,—a pillar of support,—and a rock,—around which all opposition will rage in vain.

*Illa, velut pelagi rupes immota, resistit :
 Ut pelagi rupes, magno veniente fragore,
 Quæ sese, multis circum latrantibus undis,
 Mole tenet ; scopuli nequidquam et spumea circum
 Saxa fremunt, laterique inlisa refunditur alga.*

While we contemplate the value of a discovery, which tends so greatly to augment the sum of human happiness, and exalt the glory of the British name,—we cannot entertain a doubt, that he to whose indefatigable exertions we are indebted for this blessing, will receive some token of gratitude, from the justice and generosity of a great nation. Should titles be deemed necessary, titles will flow from the fountain

of honour; but what title can he require, who is already so highly ennobled by his desert?

About the same period with the monthly publication before alluded to, a small volume on the subject of the new practice appeared, entitled "A Concise View of all the most important Facts which have hitherto appeared, concerning the Cow-pox," by Mr. Aikin, Member of the Royal College of Surgeons in London.

In the preface to his work, Mr. Aikin observes, that "the general interest which every novelty in the science of medicine excites in this country, whilst it affords a temporary success to impostures of every kind, produces this great advantage, that no very material improvement in the healing art, when once fairly brought before the bar of the public, is likely to sink into neglect; so long as it possesses such intrinsic value, as really to merit the patronage of the candid and liberal part of the community."

After tracing the origin and progress of this improvement, and bestowing a just encomium on its author, Mr. Aikin considers the following points as fully ascertained:

1. The Cow-pox may affect the human species repeatedly; but, after the first attack, it is in general less severe.

2. The small-pox, in a considerable degree, secures a person from the infection of the Cow-pox.

3. "*The Cow-pox, in its genuine state, when it has been accompanied with general fever, and has run its regular course, ever after preserves the person who has been infected with it, from receiving the infection of the small-pox.*" This most important fact, which has been the subject of popular observation in several parts of the kingdom, long before the introduction of the Cow-pox in medical practice was thought of, and therefore has the stamp of *unbiassed* evidence; may now be asserted with that confidence, which is given by "*the uniform result of the most candid examination; conducted with scrupulous care, carried to a considerable extent, and authenticated by testimony of many years standing.*"

4. The Cow-pox, in respect to the mildness of symptoms, and safety, has a decided advantage over the small-pox."

5. The Cow-pox is not infectious but by contact. This is what stamps a peculiar value on that disease, as a substitute for the small-pox; since, under inoculation of the Cow-pox, no anxious precautions are required, in order to avoid and insulate an infected person, whose breath may spread on every side; and thus the time of communicating the infection, which is ever after to afford complete security against the

variolous contagion, may be selected; so as never to inoculate, but when the subject is in a proper state.

Of the small-pox, Mr. Aikin says, “ the decisive advantages which the *inoculated* disease possesses over the *natural*, are *universally acknowledged*.”—In this respect, Mr. Aikin formed an erroneous opinion. There is one of the family of the *Wrongheads*, who will not see, and of course will not acknowledge, these advantages.

This gentleman, conscious that his cause was bad, or conscious that his name would injure one that was good, has prudently suppressed it. He has given a title to his book, which in sound is similar to that of Mr. Aikin. He calls it “ A Conscious View of Circumstances and Proceedings respecting Vaccine Inoculation.” This was an artful manœuvre; for had not some persons bought his work by mistake, thinking it was that of Mr. Aikin, the whole edition would probably have been consigned to the trunk-maker in St. Paul’s church-yard, or to the new patent paper-manufactory, to rise again in the form of fool’s-cap.

Conscious of this, he tries to escape detection by concealing his name. He sneaks, like a dog that has stolen a bone,

Conscius audacis facti, caudamque remulcens
Subjecit pavitantem utero, silvasque petivit.

He gives us a caution, which it was not consistent with his interest to give;—he tells us to *beware of counterfeits*.

This gentleman, contrary to what Mr. Aikin conceived possible in this enlightened age, being determined to maintain the character of the Wronghead family, thinks proper to be singular; and to express his disapprobation of inoculation in general.

He talks about taking matter from the ears of an *ass*; and not only talks about it, but attempts to put it into execution; by inoculating the public with matter collected in *his own*. This, he conceives, possesses an antivaccine virtue, and may check the rapid career of the practice recommended by Dr. Jenner; but it is probable, that a little mild caustic, applied in time, will prevent infection.

He says, “What the professional presumption of some men may lead them to, the author of the present lines shudders even to conjecture; and although diseases of bestial origin may, by some, be maintained to be already in existence, yet, God be thanked, the laws of our country have wisely forbidden——”

Parcius ista viris tamen objicienda memento;
Novimus et qui te, ————.

The author of the *Conscious View* is indeed conscious, that he is not altogether invulnerable; and declares he did not choose to run the risk of being

transfixed with as many shafts, as the man in Ryder's Almanack. This may be true; but it is with an ill grace, he talks of his respect for the medical character; it is with an ill grace, he professes to mean no personal reflections, and to be at enmity with no man living.

He informs us, that, as far as his enquiries have gone, no suit "has ever yet been instituted by the *lordly bull* against his *lady cow*."—I hope the author of the Conscious View, although he pays such high compliments to the "kind parent of the lowing herd," and speaks of her with such raptures, will never give his lordship reason to institute such a suit.—This, undoubtedly, was the place, where the author of the Conscious View meant to have inserted that impassioned exclamation,

"*Forgive my transports on a theme like this !*"

He protests, that he dared not, consistent with his own feelings, proceed another step, without first paying his grateful tribute to the kind parent of the lowing herd, that ample source of streams so incomparably delicious, by a free-will offering in her behalf; he proceeds, *perfuncto lætus honore*, to vilify the most valuable production of which this kind parent of the lowing herd, or any other animal in the world, can boast.

He ridicules the pretensions of the author of this most excellent discovery; and proposes in derision,

that the pillar of fame, due to our gallant heroes, should stand still awhile ; so that the present race of experimenters should be "glutted to their hearts' desire." Whatever may be the sentiments of the author of the *Conscious View*, I venture to affirm, that the hero of the Nile, and the hero of Camperdown, well know how to set a just value on a victory, over which humanity will never mourn. He who has gained this victory, is justly entitled to immortal honours, and the universal gratitude of mankind.

The author of the pamphlet, always determined to support the charter of his family, says of his remarks, that their being anonymous "is less a proof of their being apocryphal, than that they were dictated by views of aggrandisement, or motives of self-interest." If this jargon means any thing, it means, that his remarks were dictated by views of aggrandisement or motives of self-interest. This gentleman, who is so lavish in his praises of the cow, seems, like Pasiphae, to be remarkably fond of a bull :

felix, si nunquam armenta fuissent !

In the same spirit is the following sentiment. Speaking of the extensive and indiscriminate inoculation of the small-pox, he says, his rooted indignation has been almost *primæval* with, and in no wise abated since, the first hour he saw, or thought he saw, its baneful tendency. Speaking of the general preva-

lence of the small-pox, he asks, *who* we have to thank for this calamity? He concludes, that we are to thank the inoculators; *than* for whose avidity to propagate and keep up, as it were, both the terror and fomes of the disease, he thinks it might have been almost extinguished. I wish the avidity of the friends of the natural small-pox to keep up the disease, may not frustrate the efforts of the friends of vaccine inoculation to suppress it.

Before any further progress is made in what he terms this Cowpoxing business, he thinks it necessary to ascertain its utility, and therefore hopes that neither his Majesty, nor his Royal Highness the Duke of York, will lend their countenance to any other experiments, made to ascertain it.

He thinks medical interference one of the causes of the malignity of the natural small-pox; and I doubt not but he has seen a sufficient number of instances in his own practice, to confirm the truth of his assertion.

He is also of opinion, that terror produces fatal effects in this disease.—As a proof that his idea is well-founded, the following epitaph is said to have been written on a patient, who died under his own hands.

Celsus nor gave me purge nor glisten,
Nor breath'd a vein, nor order'd blister;
But being sick, I chanc'd to hear
The Doctor's name, and dy'd for fear.

Some persons having declared, that inoculation had disarmed the small-pox of all its terrors, this gentleman, who does not entertain so favourable an opinion of the practice, says, "they were a set of rogues, for lulling mankind into a state of insecurity and wretchedness, for the sake of enriching themselves." This is true; unless they can plead ignorance; the only excuse the author of the libel now under consideration can plead, for the impudence and absurdity of his remarks.

It appears to me, that every opponent of the vaccine inoculation is likely to render the most essential service to the cause which he meant to injure; and it is probable, that the strength of the arguments advanced by Jenner, will not promote the new practice more effectually, than the weakness of the arguments advanced by his calumniator, the author of the "Conscious View."

This gentleman confesses, with Dr. Jenner, that neither the natural or inoculated small-pox can perfectly extinguish the susceptibility of that disease in the human body. On this occasion, I beg leave to introduce one instance, which was rather remarkable for its violence. Mrs. Fraise, who at that time lived in Swallow-street, but now resides at Southampton, while nursing her child, who was effected with the confluent small-pox, had an eruption of five or six large pustules, on the face and the breast; attended with considerable head-ach and fever. She had be-

fore had the disease, of which she bore evident marks; and the fever was produced by the local irritation. The pustules appeared only in those parts, which had been in contact with the variolous matter of the child labouring under the disease.

This author thinks, that the small-pox is only infectious, when it is epidemic: this opinion must excite a smile. He thinks inoculation unnecessary, and that the treatment of the natural small-pox is now so well understood, that it need not occasion much dread. This was the opinion of Van Swieten; although three of the imperial family had died of this distemper, while under his care.

But it is time to return, from this review of a work, which, like the other idle attempts to depreciate the new practice, appears more like the offspring of a disordered imagination, than the production of a rational man, to the concise view of the same subject, by Mr. Aiken.

Having proved, that the advantages which the inoculated small-pox possesses over the natural, are not *universally* acknowledged, as Mr. Aiken supposed, I proceed to a farther investigation of his ingenious essay.

He observes, that the casual Cow-pox is received by a kind of inoculation, though accidental. After laying down rules for the choice of matter, similar to

those laid down by Dr. Jenner, and other authors who have written on this subject, Mr. Aiken declares, that the experience which the inoculated Cow-pox already affords, seems to show, that it may be practised with great safety at any age. He is of opinion, that it ought to be avoided during dentition, or any violent indisposition of the body; but that we may assert with confidence, any time is preferable to running a considerable risk of the small-pox contagion.

This, my own practice amply confirms. I have inoculated with vaccine virus those of every age, from the time of birth to eighty-four years, and those who have been considerably indisposed from teething and various other causes, when they were exposed to the danger of the variolous infection; and have had no reason to repent of the line of conduct I pursued.

On the subject of pustulous eruptions in this disease, I cannot avoid a different opinion from that expressed by Mr. Aiken. These, he says, under particular circumstances, appear both in the neighbourhood of the inoculated part, and in other parts of the body; run a regular course *similar* to the pustule formed by inoculation; and become filled with a *purulent fluid*, which has likewise the specific property of communicating the disease by infection. He admits, that the appearance of these pustules may be considered as a *rare occurrence* in the genuine Cow-pox; and this, he says, has given rise to some difference of opinion concerning their origin.

He thinks, two causes of a truly pustular eruption are fully ascertained.—The first, he says, is a rough and unskilful method of inoculation, where the wound is made deeper than necessary. In this case, he affirms, several pustules will *often* appear on different parts of the arm. Were this hypothesis well-founded, a local pustulary eruption, at least, would be *no rare occurrence*.

The second cause of pustules, Mr. Aiken says, is exposure to the contagion of small-pox, during the time that the vaccine inoculation is making its usual progress. As a proof of this, he refers to the cases which occurred at the Small-pox Hospital.

It appears to me rather surprising, that any person who is so well acquainted with the history of vaccine inoculation, should doubt of those cases having been cases of *small-pox*; and, after all that has been written, still affirm, that the pustules in such cases are filled with a fluid, which has the property of communicating the *Cow-pox*.

It is surprising Mr. Aiken should deem it a question, that still remains to be determined, whether pustules of this description partake of the nature of the variolous contagion; or whether the matter of such pustules ought to be avoided in future inoculations. The public have long been in possession of evidence sufficient, and more than sufficient, to enable them to determine that point.

Mr. Aiken says, the pustular cases are *not more frequent* than formerly: he might have said, they are much less frequent. After enumerating many of the advantages attending this practice, he expresses a hope, that the extirpation of the small-pox from every civilized country will no longer be an impracticable undertaking; and that the vaccine inoculation is peculiarly calculated to produce this desirable end.

He very judiciously observes, that were the advantages which it offers much less perfect, it would still be worthy of notice; and possess sufficient recommendations. But since it imparts all the security to the patient which the small-pox itself affords, it has this additional claim to preference; that while the welfare of the individual is eminently consulted, no contagion is disseminated of a disease, which, when contracted in that form, is one of the most distressing in its symptoms, formidable in its appearance, and doubtful in its events, of any to which mankind in general are exposed.

I cannot conclude my remarks on this work, without congratulating the public on such an early pledge of hereditary talents, devoted to their service. Whatever imperfections may appear, as an alloy, I should have thought it less necessary to point them out, had they not been sanctioned by the name of Aiken.

It is now incumbent on me to give some account of another publication, which appeared about the

same time ; entitled, " A Comparative Statement of Facts and Observations relative to the Cow-pox, published by Doctors Jenner and Woodville."

Having previously expressed, in the Medical Review, sentiments in a great degree similar to those of the author of this publication, it is unnecessary for me to enter into his arguments in detail. I shall, however, present my readers with a few extracts from the work:

The author informs us, that in the second tract published by Dr. Woodville on the subject of the Cow-pox, he not only corroborates the favourable opinion which he had expressed of the disease in his first ; but, from an enlarged experience, gives more decisive evidence of the advantages with which it is attended.

He then states, that although it appears from these reports, he has, by a mass of irresistible evidence, established Dr. Jenner's principal positions, beyond the reach of scepticism or cavil ; yet there are positions of secondary import, concerning which he is not only in direct opposition to Dr. Jenner, but at variance with himself.

He observes, that Dr. Woodville coincides in opinion with Dr. Jenner in his most important position ; namely, "*that persons who have been affected with*

Cow-pox, are rendered perfectly secure from the effects of variolous contagion."

This position, however, is not tenable. I have already shewn, that it ought to have been worded to this effect: *those who have had the Cow-pox, are perfectly secure from the future infection of the small-pox.*

Our author next observes, Dr. Woodville agrees with Dr. Jenner, that the Cow-pox is not contagious by effluvia, "when the disorder is confined to the inoculated part." It is now well known, that those cases, where infection was communicated by effluvia, were cases of the small-pox.

The author then remarks, that the following position of Dr. Jenner next merits our attention: "*that no eruption, ending in variolous-like pustules, belongs to the Cow-pox.*"

On this point, Dr. Woodville now agrees with Dr. Jenner so far, as to admit that the pustular eruptions resembling the small-pox, are the effect of some *adventitious cause*; and of course, are not the effect of the Cow-pox.

Dr. Woodville perfectly concurs in opinion with Dr. Jenner in regard to his fourth position: "*that the Cow-pox is a much milder disease than the small-pox.*"

The last position of Dr. Jenner and that of least importance, namely, *that the Cow-pox proceeds from the diseased fluids of a horse*, our author observes, Dr. Woodville is far from adopting.

It must, however, be recollected, that the proofs on which Dr. Woodville founds his own opinion, are of a negative kind. Not so the following, adduced by a veterinary surgeon; whose second successful experiment has been related, in a former part of this treatise.

Our author says, “ Mr. Tanner being known to Dr. Woodville, and respected by him for his integrity, Dr. Woodville can justly appreciate the degree of credit that ought to be given to the following letter :”

“ SIR,

“ Some Cow-pox matter on a thread, was applied to the teat of a cow, on the part from which a scab had been removed. I procured it from Mr. Fewster of Thornbury; who told me it had been kept a long time, and that he did not think it possible for it to produce any effect. I went to the cow, and examined the part where it had been applied, in five days after; but it had not produced the smallest effect. Some limpid matter, just taken from the heel of a horse, was then applied on the part; and on the ninth day, when I first examined it, I found that it had produced a complete vaccine pustule.

From handling the cow's teats, I became infected myself; and had two pustules on my hand, which brought on inflammation, and made me unwell for several days. The matter from the cow, and that from my own hand, proved efficacious, in infecting both human subjects and cattle.

" I am, &c.

" THOMAS TANNER."

This last position, the author of the Comparative Statement observes, though it does not relate to the beneficial effects of vaccine inoculation, becomes interesting as a matter of philosophic research. He adds, that to the public mind, which has been wavering in consequence of *unfounded reports*, industriously and maliciously propagated, by persons totally unacquainted with the common appearance of the disease, it must be highly gratifying to know; that the principal positions of Dr. Jenner, formed on the experience and observations of above twenty years, should have stood the test of a severe investigation, so ably conducted by Dr. Woodville.

The author then pronounces a well-merited panegyric on Dr. Jenner; to whom, and to whom *alone*, the public is indebted for this benefit. He justly applauds him for his persevering attention to the subject, his firmness in bearing the assaults of his adversaries, his disinterested efforts in the cause of humanity, and his turning aside the shafts of envy, avarice, conceit, and ignorance, with silent contempt.

In regard to pustules resembling those of the small-pox, our author remarks, it cannot be concealed, that Dr. Jenner and Dr. Woodville entertain different opinions. Dr. Jenner denies that these ever appear in the Cow-pox. On the contrary, in the practice of Dr. Woodville, at the Small-pox Hospital, four of the first seven, and three hundred of the first five hundred, had such pustules.

The author then observes, that, singular as it may appear, Dr. Woodville himself falls into Dr. Jenner's original opinion, "*that the variolous-like pustules are independent of Cow-pox.*"

He then tells us, that by inoculating with matter, taken from the varioliform pustules, on the body of those who were under the vaccine inoculation, Dr. Woodville produced similar pustules in fifty-seven out of sixty-two patients; and in the same proportion in those who were inoculated with matter from any of the fifty-seven. He adds, that from the great number, which appears to have been inconsiderately inoculated at the hospital with matter from the varioliform pustules *on the body*, he thinks it probable, the seeds of future eruptions may have been widely disseminated.

This author conceives, that if you apply a caustic to the Cow-pox pustule on the arm, on the seventh day, or before the constitutional symptoms commence, you will effectually prevent the disease. It

is, however, certain, that in many cases the disorder makes a greater progress by the seventh day, than it does in others by the twentieth; so that no particular day can be fixed on, before which you always may, or after which you never may, prevent the constitutional affection, by destroying the pustule with caustic.

We are then told, “ it has been ascertained by experiment, that the casual small-pox may be superseded, by inoculating those persons with variolous matter, who have been, for five days previous to the inoculation, exposed to a *variolated atmosphere*.”

I have always entertained a doubt, whether this opinion, however prevalent, was well-founded. In the first place it must be recollected, that the infection of the small-pox, in a gaseous form, is very slight for the four first days; and therefore the persons who are exposed to that infection, are the more likely to escape. In the next place, it is extremely difficult to determine, whether the eruption, when it appears, is the consequence of the artificial or natural disease; since the natural is sometimes light, and the artificial is occasionally severe.

Our author next observes, that there are cases, which demonstrate a want of power in the Cow-pox, to arrest the progress of the casual small-pox, in those who have been exposed to a *variolated atmosphere*,

previous to their being inoculated with the virus of Cow-pox.

Many of these cases I have related in the course of this treatise; and some have occurred since, in my own practice, as well as in that of several other inoculators. Nevertheless, I am still inclined to believe, that the vaccine infection has often superseded the small-pox; and in no one instance has it appeared to me to augment the danger of that disease.

The author then asks, Whether we may not draw from these experiments the following inference?—“That the casual small-pox, arising from exposure to a variolated atmosphere, will proceed through its stages, without interrupting the progress of the Cow-pock pustule on the arm of the same person.”

It has already been shewn, in this dissertation, that the small-pox, whether arising from a variolated atmosphere, or from inoculation, sometimes alters the appearance of the vaccine pustule; and causes it to assume, in some degree, the characters of the small-pox.

The author of the Comparative Statement concludes, that the cases which occurred at the Small-pox Hospital, with varioliform pustules, were cases of small-pox; and that the two diseases are distinct, and their characters strongly marked; differing in

every essential point, but that of rendering the constitution insusceptible of the future action of the small-pox. There is, however, nothing repugnant to reason in supposing, that a coalition of two diseases, naturally distinct, may sometimes take place; and a hybrid disease be the consequence. In some cases, where complicated experiments are made, the vaccine fluid, like the waters of Arethusa, seems to flow pure and unpolluted; but in others, that bitter Doris, the small-pox, appears to be mingled with the sacred stream.

The author adverts to the occurrence of secondary pustules, where the patients were not known to have been exposed to the infection of the small-pox. This point has already been fully discussed. In one respect, however, he misunderstands Dr. Woodville's meaning. He did not imply, by the question which he asked, that the matter obtained from Mr. Paytherus was impure; but that notwithstanding it was pure, it produced pustules; and, of course, that the matter which he himself employed, though it excited pustules, might have been pure also.

The author, however, maintains the contrary; and relates different instances, where matter procured from the Small-pox Hospital for Cow-pock matter, generated the small-pox. He concludes his very valuable work, with a number of cautions, addressed to those, who venture to inoculate for the Cow-pox, without understanding the diagnostics of that disease. They

relate chiefly to the choice of matter, and its local action; and are similar to those which are contained in the present treatise, and in the different publications on this important subject.

To enable every person in some measure to distinguish the Cow-pox from the small-pox, a plate is annexed to the Comparative Statement; in which the vaccine and variolous pustules are delineated and coloured from nature; and exhibit the true characteristics of the respective diseases to which they belong.

In the Medical Journals for November, is a letter from Sir Christopher Pegge, concerning the origin of the vaccine virus. Of the evidence therein contained I had previously given some intimation, in the Medical Reviews for June and July.

In this letter Sir Christopher Pegge relates a series of facts, tending to establish Dr. Jenner's opinion, that the Cow-pox is originally produced by the matter of grease. These facts were communicated to Sir Christopher Pegge by Mr. Lupton, surgeon, of Thame.

Sir Christopher Pegge says, "the attention of Mr. Lupton was first drawn to the present subject in March last; when the son of Mr. Way, farmer, of Ichford, applied to him on account of a complaint in his hand, attended with ulcerations very much

resembling the Cow-pox. There was evidently a very great derangement of the system, and the symptoms plainly indicated an absorption of morbid matter; as the case was also attended with considerable swelling of the hand and arm, an enlargement of the axillary glands, rigors, pain in the head and back, together with a greatly increased quickness of the circulation.

“ He could only account for these complaints, from his having washed the ulcerated heels of a horse; having had no previous communication with the cows.

“ These circumstances led Mr. Lupton to conceive, that there might be a disease incident to the horse, analogous to the Cow-pox, and communicable to the cow; and, upon repeated enquiry, he was satisfied, that it was not the common grease to which horses are liable, that had produced the above effects.

“ Mr. Lupton was so good as to communicate this information to me at the time; treating it as a matter of curiosity, rather than of serious investigation; and I heard no more from him on this subject, till the 8th of April, when I received the following letter.”

“ DEAR SIR,

“ SINCE my last letter respecting Mr. Way's son, I have had another case of infection communicated to the human subject; owing to mat-

ter absorbed from the ulcerated heels of a horse. The person is Richard Hunt, a servant of Mr. Randolph, of Thame-Park Farm; whose first symptoms were stiffness and uneasiness of the arm, swelling of the axillary glands, succeeded by pustules on the hand, and a very painful suppuration of the middle finger; which had that blue appearance described by Dr. Jenner, as indicating the true vaccine disease. These were accompanied with rigors frequently recurring; attended with great heat, anxiety, giddiness, pain in the head and back, sickness and vomiting.

“ Such were the appearances when I first saw him, which was on Sunday, March 30. On the 31st, he had a very bad night, and had been slightly delirious; the other arm growing stiff and painful. April 1st, he was much better in every respect, except the painful state of the finger, and the inflammation of the hand and arm. The course of the lymphatics was at this time beautifully marked with streaks of a vivid red colour, extending from the wrist to the axilla. April 2d, he continued better. April 3d, he had a bad night, from the pain of the finger. A puncture was now made; and about two tea-spoonfuls of a dark-brown coloured fluid were discharged.

“ April 4th, the cuticle was removed; and discovered a shining red ulcerated surface, in the middle of which was a spot of a sloughy appearance, of the size of a silver penny. This was covered with the red nitrate of quicksilver. The inflammation, pain,

and swelling of the hand and arm, were now considerably abated; and in other respects he was much relieved. April 6th, the finger was much better: the pustules of the hand had a *dark-coloured depression in the centre, surrounded with an elevated margin of matter*. From this time he had no complaint. It must be particularly remarked, that this man has not milked any cow since last Michaelmas."

We are then informed, that on the 9th of April, John Watson, another servant of Mr. Randolph, applied to Mr. Lupton, with symptoms similar to those of the former; in consequence of having assisted Hunt in dressing the heels of the horse. Watson was employed in milking the cows. Previous to the appearance of ulceration on his hands, the cows had been infected more than a week; and there can be no doubt that the cows had received infection from the horse, through the medium of this man.

Whether the ulceration in his hands was the immediate effect of matter received from the heels of the horse, or of that which had undergone a modification in the teats of the cow, Sir Christopher Pegge observes, it is not easy to decide; but he has no doubt that the virus was conveyed by this man, from the heels of the horse to the teats of the cow.

On the 18th of May, Sir Christopher Pegge happened to be at Thame, and was informed by Mr. Lupton, that a third servant of Mr. Randolph was

affected in a similar manner; and it was evident he had received the infection from the cows; as he had never assisted in dressing the heels of the horse. The disorder from which this virus originates, we are told by Sir Christopher Pegge, is termed by farriers a scratchy heel; and considered as widely different from common grease.

From the last of these men, Mr. Lupton inoculated several children; whom Sir Christopher Pegge saw on the eighth day after inoculation, with the most decided appearance of true Cow-pox upon them. This appearance, he says, he could not mistake, after having witnessed so many instances of it at his friend's, Mr. Fermor, of Tusmore; whose benevolent and disinterested exertions have contributed so largely to the stock of facts in support of a discovery, which promises to be of the greatest benefit to mankind.

In all the children who were inoculated with this matter, the disease terminated favourably; and as neither of them has had the small-pox, it is Mr. Lupton's intention to inoculate them with variolous matter, when a convenient opportunity offers.

It is remarkable, that in all the three men above-mentioned, before any ulceration, or even sensation of pain, took place in their hands, they were affected with swellings in the axilla, and other symptoms denoting constitutional disease.

In the Medical Journal for the same month, is a letter from Dr. Cayley, of Durham, in which he observes, that among the numerous advantages to be expected from this periodical work, is to be reckoned one, not of the least importance; namely, the extinction of prejudice amongst persons in the superior stations of life, who are not of the medical profession.

He observes, that at the time of his writing, we meet with a powerful opposition to the general introduction of the Cow-pox. He asks, Whether the frequent fatality of the natural small-pox, in this and every other country, will not justify an attempt to eradicate a disorder, which is deservedly held in horror?—He remarks, that however mild the inoculated small-pox may be, it cannot, he thinks, afford any favourable argument against the vaccine inoculation; which appears, almost beyond a doubt, to have exempted from the small-pox those who have undergone that process; and possesses so many advantages, of which the inoculation of the small-pox cannot boast.

The same Journal contains a communication from Mr. Custance, of Kidderminster, on the same topic. This gentleman also gives his suffrage in favour of the new practice.—He says, the vaccine inoculation has been brought before the tribunal of the public with such a *weight* of evidence, that he thinks an *impartial* jury must give a verdict in its favour.

On this account, he thinks it may be superfluous to bring forward any more witnesses. Nevertheless, he states the result of one experiment, which had removed one doubt from his mind. Having inoculated for the small-pox a child of a person, who, together with two of her other children, had been inoculated for the Cow-pox, and afterwards for the small-pox, by Dr. Jenner, about fourteen months before; he doubted whether time might not so far alter the constitution, at least of children, as to destroy the former good effects of the Cow-pox; and therefore inoculated the mother and the two children with the infant. In all three, the variolous inoculation totally failed; although the infant, who had been inoculated with the same matter, sickened, and had an unusual number of pustules.

In the same number of the Journal, is a letter from Dr. Barry, of Corke, to Dr. Pearson; in which he gives such information as he has been able to collect, with respect to the traditional and popular knowledge of the Cow-pox. His researches have hitherto been confined to a small portion of the western part of the country; where he has met with thirteen instances of people who were supposed to have gone through that distemper; and were afterwards exempt from the small-pox.

He says, with regard to the supposed origin of the disease, it was never suspected in that country to be derived from the grease: and he deems the bare

proof of the existence of the Cow-pock in that country a sufficient refutation of what he calls the only hypothetical part of an investigation, conducted with uncommon ingenuity, and completely satisfactory in the principal objects for which it was undertaken; since women alone, as far as Dr. Barry's information extends, are employed in milking in that country.

It must, however, be recollected, that positive evidence is much stronger than negative; that Dr. Jenner was at first told, men never were engaged in this occupation, and afterwards heard of an exception; that it is not improbable, instances, similar to that related by Dr. Marshall, may occur; and that a farmer's son, or servant, may occasionally assist the dairy maid in milking the cows.

Dr. Barry relates some of the cases, where the Cow-pock was supposed to have existed; and to have secured the patient from the infection of the small-pox.

In the first case, a man who slept with a cow-boy labouring under an eruptive disease, was attacked with a shivering, general uneasiness, and sickness at the stomach; which subsided on the appearance of an eruption in his neck, breast, and arms. The axillary glands were swelled, and very painful. This man has since resisted variolous contagion in different forms; which to me appears not at all surpris-

ing, for I have not the least doubt that his disease was the small-pox.

The cow-boy, we are told, *as far as this man recollects*, got the disease from rubbing the sore teats of the cows with some application. “He is sure it was from the cow-boy he was infected; as he himself did not handle the cows. His sister had the disorder at the same time; and has also been since inoculated, without taking the small-pox.” Here was a coincidence, which might well deceive these ignorant rustics. We have already been informed, that it is common in dairy counties, to call the chicken-pox the Cow-pox. Why might not the same misnomer take place, with regard to the small-pox?

A similar coincidence, occurring twice, induced Dr. Turton, of Swansea, to conclude, that the Cow-pox derived its origin from the small-pox. In the present instance, a pustulous disease, of which the origin is not well ascertained, was communicated from one person to two others in the same house. This proves it was not the genuine Cow-pox: and if it protected the constitution from the small-pox, as it was supposed to do, it probably was not of the spurious kind.

The next cases also are totally different from the genuine Cow-pox. A woman laboured under a pustulous disease, when the cows were afflicted with a similar disorder. After suffering sickness at the

stomach, more severe than any she had ever experienced, together with symptoms of general fever, she had a copious eruption of pustules on her hands. This disease, we are told, she communicated to her infant. It is difficult to say, what resemblance this disorder bears to that described by Dr. Jenner.

The next case is that of a woman, who, thirty-seven years ago, was brought with a number of other children, to a dairy, for the purpose of being infected with a disorder of cows, called the shinach; which, according to the general belief of the neighbours, would for ever secure those who had it from the small-pox. She had *one* pimple on her hand. She was afterwards twice inoculated for the small-pox; but without effect; and the gentleman who had inoculated her declined repeating the operation, alleging that there was not the smallest danger of her ever catching the small-pox, as he could aver from experience. She has since been frequently exposed to the small-pox, and slept four nights with her own children, in the height of the eruption; but escaped the disease. Here the distemper was local; and so far characteristic of the genuine Cow-pox. If that which is described before, really originated from the cow, and proved a preservative against the small-pox, it may be a distinct species from the disease which is described by Dr. Jenner.

We are then favoured with an extract of a letter, which, we are told, is equally worthy of attention,

on account of the information it contains, and the authority from which it is derived. It is as follows :

“ It is thirty years since my mother had the Cow-pock. She recollects having had two pimples on one hand; which were much inflamed, and afterwards went on to suppuration. She has been inoculated frequently since, and exposed to the infection of small-pox in various ways, without taking it; which has been attributed to her having had the Cow-pock, universally known among our farmers by the name of shinach. I was last night speaking to my grandmother on the subject. She had the Cow-pock fifty years ago. Her account agrees with my mother's. She had the eruption on one hand, and she says, she never experienced so much pain as while the inflammation lasted. She has never been inoculated; but was very often exposed to the small-pox without taking it. At the time she had the disease, there was scarcely a spring that the cows were not affected with it; and it was so universally believed, that those who took it were ever after exempted from the small-pox, that people exposed themselves to it as much as possible. My grandmother, who is above eighty years old, says, that the same opinion always prevailed in this country.”

Here we have an account of two cases, which are singularly valuable. The pustules were few, and confined to the parts where infection was received. We have therefore no reason to doubt, that they

were cases of the genuine small-pox. They are additional proofs, both of the permanency of the exemption obtained from the small-pox, and of the belief of that exemption having prevailed in Ireland, as well as in England, from time immemorial.

Dr. Barry adds, "other accounts agree, that the distemper is not near so frequent as it was forty or fifty years ago. It appeared, however, in this neighbourhood last month; but declined before I had an opportunity of seeing it. In one part of the country, where there are no traces of it, except in the memories of some very old people, they account for its disappearance in the following manner. They assert, that it was first produced by the bite of a certain insect, the breed of which has now been destroyed by the frogs, which are known to be of foreign origin, and retain their English name. I mention this to shew, that the Irish are not wanting in conjecture, concerning the origin of the distemper, more than the English. This opinion of the disease, however, is not general."

Dr. Barry will perceive, that the opinion entertained in this country, respecting the origin of the Cow-pox, rests on a more solid foundation than that of conjecture. It is not impossible, that in Ireland, men may have interfered in the office of milking cows more frequently in former times, than at the present day. We have reason to hope for still further information on this important subject, from the learned

physicians, to whose unwearied exertions we are already so much indebted, for what knowledge we hitherto possess, of the existence of the disease in the sister kingdom.

From him we learn, that Shinach, the Irish name of the disease, belongs to the old written language of the country; and has no relation to the modern colloquial dialect. This Dr. Barry justly considers as a strong proof of the antiquity of the distemper. He remarks, that all the cases adduced by him, prove the antivariolous power of the Cow-pox not to be fugitive but permanent; and thus an argument which has been used against the new inoculation, in Ireland as well as in England, receives a satisfactory answer.

The last paragraph of Dr. Barry's letter to Dr. Pearson must be highly gratifying to every reader, and cannot be abridged without injury. I shall therefore enrich my treatise, by inserting it in this place.

“I received some vaccine infection from Dr. Bradley, previous to my having received your letter, as I have acknowledged in a communication to the *Physical Journal*. With the thread received from him, I was successful in procuring an abundance of infection. I gave your thread to my friend Dr. Sugrue, who had equal success. He has extended the inoculation to 50 children. The number I have inoculated amounts to 250, not above three of whom

had eruptions, which disappeared without suppurating. I have not inoculated above 12 with the small-pox, the lower order having some superstitious notions, which prevent them from agreeing to a second inoculation. I selected five of these, from their not having exhibited the least appearance of constitutional fever, though the progressive state of the puncture at the arm had been exactly similar to the other cases. Two of the five were adults, and therefore capable of describing any symptoms they might have experienced. The matter I used was fresh taken, from a child covered with variolous eruption in a state of suppuration. The punctures, after looking inflamed for three or four days, withered without forming a pustule. Hence I would infer, that it is the state of the arm alone we should regard, particularly as fever is produced in children often from the slightest causes. I have the pleasure to acquaint you, that most of the physicians of respectability in this city are fully convinced of the efficacy of the Cow-pock. I have supplied many of them with infection; among others, Dr. Longfield, who has inoculated his only grand-child, the infant son of Mr. Leslie, the banker. From Dr. Longfield's age, the respectable rank he holds in his profession, and his love of science, his example must have great weight with the public. To remove some objections which have been advanced against the inoculation, and extend its benefits as widely as possible, I have it in contemplation to address the

public in a small pamphlet in a popular style. This seems necessary, as very few of the original works on the subject have yet reached this country, and therefore objections, however weak, must have their effect, when they remain unanswered. By this means I shall also, I trust, be enabled to collect more numerous facts on the natural Cow-pock. If you have any new information on the subject, I should be obliged by the communication of it. If you have no particular use for the information I transmit you, I shall thank you to send it to Dr. Bradley for publication, if he thinks proper. With him I beg you will accept of my acknowledgments for the infection, which promises incalculable benefits to this part of Ireland."

Another interesting communication on the same subject, occurs in the Medical Journal for the same month, from Dr. Cappe, of York. It contains the resolutions of the Directors of the York Dispensary, together with two letters which had been published in the York Herald by Dr. Cappe, previous to the meeting at the Dispensary. "These," says Dr. Cappe, "will shew that we are not totally negligent of the welfare of our fellow citizens, though so far remote from the centre of animation."

The substance of these resolutions is, that it appears, from many of the most experienced medical men, that a general inoculation for the Cow-pox

throughout the kingdoms of Great Britain and Ireland, would tend to effect the extinction of the casual small-pox; and consequently be the means of annually saving upwards of 45,000 lives.

“ That the physicians and surgeons belonging to the Dispensary be requested to form themselves into a society, for the purpose of inoculating all such persons as may present themselves for inoculation with the Cow pox; and invite into their body such physicians, surgeons, and apothecaries, resident in York, as, in their opinion, may be likely to promote the objects of that society.

“ That the physicians and surgeons of the Dispensary be desired to supply the country practitioners with matter, when requested.” I hope a time will come, when medical practitioners will be supplied with matter, from every public institution in the kingdom, upon the same terms.

“ That the Directors shall use their utmost endeavours, to encourage inoculation for the Cow-pox in all the neighbouring villages;” that the public subscription be solicited, for defraying the expense to be incurred; and that the plan be carried into execution with all convenient speed.

“ That the resolutions and regulations of this meeting be sent to all the clergymen in York, and the

neighbouring villages; with a request of the meeting, that they will communicate the same to their parishioners; pointing out the advantages attending the inoculation for the Cow-pox, in any way which they judge most likely to forward the views of this meeting.

“That the medical gentlemen of the Dispensary be requested to draw up and print such rules for the use of the poor, as may be necessary to regulate their conduct, and attendance at the Dispensary, during the period of inoculation for the Cow-pox.

“That books be opened at the York banks, where the smallest sums will be received, in support of a plan, that has for its object the extinction of the small-pox; *it being a fact, supported on the best authority*, that those who have had the Cow-pox, are rendered incapable of receiving the infection of the small-pox.

“That the resolutions of the meeting be signed by the chairman; printed for general distribution; and published in the York papers.”

Dr. Cappe's letters, which had been published in the York Herald, are subjoined. In the first he remarks, that it is generally known, that more than two years before that period, Dr. Jenner, a physician of long experience and high reputation in Gloucester-

tershire, published a description of a disorder, much less severe than the small-pox; which renders the human body permanently secure against the various contagion. He observes, that the fact which was known many years ago in some parts of the island, among those who had received the disease casually, was long the object of Dr. Jenner's attention; and since his first publication, has been verified by the observations of many eminent physicians and surgeons in London, and different parts of the country; and by many gentlemen not engaged in the profession of medicine. He adds, "the disease has also been transplanted to the continent, with the same good effect; and has been received by some of the first families in this kingdom."

Dr. Cappe having introduced the practice of vaccine inoculation into the city of York, says, he found it correspond in every respect with the accounts already published; and, as a friend of his, an eminent surgeon in London, expressed himself in a letter to Dr. Cappe, he has "not seen any indisposition attend it worthy of notice."

Dr. Cappe proceeds to point out the advantages which the new inoculation promises over that of the small pox.—"The small-pox," says he, "are communicated through the air; and the contagion attaching itself to clothes, merchandize, and letters, is spread over a vast extent of country; and is sometimes conveyed across the sea to distant king-

doms. The small-pox were brought from the East to Europe; they were probably in Britain before the birth of Mahommed. The Europeans have since spread this dreadful disorder from the equator to the pole. The Danes carried it to Greenland; the Spaniards poured its ravages, more terrible than their arms, through the unhappy country of Peru. In the single province of Quito, 100,000 died of the small-pox, when they first appeared in that country.

“ From the London Bills of Mortality it appears, that the small-pox have, upon an average, annually destroyed more than 2,020 persons during 75 years, ending at 1777. The total amount is, 151,570. Since that date, Dr. Cappe says, he has not the bills before him; but in 1798, 2,237 died of the small-pox, and in 1799, 1,111. These bills do not include the deaths of those who are buried out of London, or in grounds not belonging to the established church; nor those who die in the two populous and extensive parishes of Pancras and Marybone; in the former of which the Small-pox Hospital and the Foundling are situated.”

Dr. Cappe justly remarks, that the very means which save the lives of one part of the community, expose the lives of the other part to the greater danger, and increase the number of those who receive the contagion. He is so far from thinking, that inoculation has hitherto proved beneficial, that

he asserts, the disease is now more fatal than it was before that practice was introduced. The necessity of free admission to the open air to the sick, has had no small share in rendering it thus fatal to others.

It is the opinion of Dr. Cappe, as well as of most other medical men who are conversant in inoculation, that the smaller the wound inflicted is, the better it will be for the patient: of course a puncture is preferable to an incision. He also recommends, that the matter should be taken in its most limpid state; and, in general, about the eighth day.

He concludes his first letter with observing, that we have reason to be infinitely thankful to Providence, for the means now put into our power, of immediately checking the ravages of one of the most fatal plagues; and for the cheering hope of entirely exterminating that scourge from the face of the earth. With these sentiments, he declares, he feels it no less than a duty, to lend his aid in spreading around a knowledge of the advantages, which the vaccine inoculation offers.

In his second letter, Dr. Cappe communicates additional information, concerning the fatality of the small-pox. He proves, by the authority of Price, in his *Observations on Reversionary Payments*, and of Dimsdale, in his *Thoughts on General and Partial Inoculation*, that when the number of births in London was, on an average, about 16,291, the num-

ber of those who died of the small-pox was, on an average, about 2,544. Consequently there were two deaths from this disease for every thirteen births. In Liverpool, the mortality of the small-pox has been still greater; for there have been two deaths from the small-pox, for every eleven births.

In York, it is probable the deaths from small-pox would be still greater in proportion to the number of births; since 32 in a year would render it equal to that of London; and Dr. Cappe had been able, with very little trouble, to collect the names of 21 children, who had fallen victims to that disease within the last three months, and feared that a more strict enquiry might greatly increase the list.

He successfully combats the popular prejudice, that no civil regulation can controul the progress of the small-pox: authentic proofs of its extermination from Rhode-Island, New-England, and St. Helena, having been produced; there is a great probability, that by the like methods, it might be exterminated from Great Britain.

Of this, he asserts, we have an example, in the bosom of our own country. A society for the extirpation of the small-pox was formed at Chester, in the year 1778, on the suggestion of Dr. Haygarth; and its efforts were crowned with a considerable degree of success. One of the rules of this society required a general inoculation for the small-pox, at

stated periods. This was attended with difficulty : some persons refusing to introduce into their families a disorder, which, even in that form, sometimes proves fatal.

This obstacle to the accomplishment of a purpose so much to be desired, Dr. Cappe observes, is now happily removed, by the discovery of the Cow-pox ; a disease in its nature mild, not infectious in the form of effluvia, nor attended with danger ; yet affording a permanent security against the contagion of the small-pox. No restraint is necessary to be imposed, on account of season ; nor is a general inoculation necessary to be insisted on, for fear of disseminating a dangerous epidemic.

“ The small-pox,” says Dr. Cappe, “ are chiefly destructive to the poor : the rich, for the most part secure their children from the casual small-pox by inoculation : but this is done at the risk of their less intelligent neighbours. Thus an operation, which confers an invaluable blessing on the few intelligent individuals who adopt it, becomes injurious to the less intelligent part of the community. Humanity calls aloud on us, to substitute a disease, which brings security to those who seek it, and spreads danger to none. The poor need no inducement to adopt the Cow-pox. The choice is now theirs ; whether they will secure to their families life and health ; or leave their children the prey of a loathsome and destructive plague, from the dreadful con-

sequences of which death would often be a desirable release.

Dr. Haygarth, whose plan for exterminating the casual small-pox, has long excited the attention, and gained the applause, of all Europe, in a letter to Dr. Cappe says, "an introduction of the vaccine, still more than of the variolous inoculation, would effectually promote the great object of my publications."

To this very respectable testimony I shall add another, that of Dr. Hunter of York; who, in a letter to Dr. Cappe, expresses his sentiments in the following manner. "A general inoculation for the Cow-pox, holds out to the community at large a security against the casual small-pox, in a manner that must meet the approbation of all serious and sober persons. The endeavour to introduce a mild disease, in order to exterminate one of an alarming and dangerous nature, reflects great honour on you and the gentlemen of this city, who have voluntarily stepped forward in the cause of so much humanity: and I beg leave to assure you and the other gentlemen, that I am ready to give my gratuitous assistance, when called upon as a professional man.

Dr. Cappe concludes this letter, with a refutation of a report, that a child had the small-pox after the Cow-pox. This was so far from being true, that, although he slept with his sister during the whole

time she laboured under the natural small-pox, he did not receive infection.

Such testimonials, proceeding from such respectable members of the medical profession, cannot but be highly flattering to Dr. Jenner; and conducive to the interest of the great cause of humanity in which he is engaged. Thus honoured with the approbation of the wise and good, it will not be in the power of ignorance or prejudice to frustrate his design; it will not be in the power of envy or detraction, to tarnish the lustre of his name, or obscure his glory.

Conscious of having conferred an inestimable benefit on the whole human race, he may justly expect whatever remuneration a grateful country can bestow. But should he be disappointed of a due return for his unparalleled services, and meet with ingratitude, he may well be content to suffer ingratitude with all the greatest benefactors of mankind.

“ Romulus, et Liber pater, et cum Castore Pollux,
Post ingentia facta deorum in templa recepti,
Dum terras, hominumque colunt genus, aspera bella
Componunt, agros adsignant, oppida formant;
Ploravere suis non respondere favorem
Speratum meritis: diram qui contudit Hydram,
Notaque fatali portenta labore subegit,
Comperit invidiam supremo fine domari.
Urit enim falgore suo, qui prægravat artes
Infra se positas; extinctus amabitur idem.

“ Edward and Henry, now the boast of fame,
And virtuous Alfred, a more sacred name,

After a life of gen'rous toils endur'd,
 The Gaul subdu'd, or property secur'd,
 Ambition humbled, mighty cities storm'd,
 Or laws establish'd, and the world reform'd;
 Clos'd their long glories with a sigh, to find
 Th' unwilling gratitude of base mankind!
 All human virtue, to its latest breath,
 Finds envy never conquer'd, but by death.
 The great Alcides, ev'ry labour past,
 Had still this monster to subdue at last.
 Sure fate of all, beneath whose rising ray
 Each star of meaner merit fades away!
 Oppress'd, we feel the beam directly beat,
 Those suns of glory please not till they set."

To return from this digression: in the York Herald, of the 25th of October, is a third letter from Dr. Cappe, addressed to Dr. Belcombe. In this letter Dr. Cappe expresses his satisfaction, that the public attention is so much interested, on a subject of great importance to the health of that city; and especially, that most of the medical gentlemen in York had already shewn a disposition to promote the general inoculation of the Cow-pox.

Dr. Belcombe had recommended previous friction of the skin, to insure infection; as proposed by Dr. Trotter, in the Medical Journal. From this, Dr. Cappe says, he has never known any advantage derived: on the contrary, he thinks, it sometimes occasioned too copious a discharge. I have also made a number of experiments, in order to determine the same point; and found the practice much less suc-

cessful in securing infection, than that which is in common use.

Dr. Cappe says, "if the Cow-pock matter be taken in its limpid state, there cannot be a doubt of its being genuine; and incapable of communicating any other disease than the genuine Cow-pox." If the matter be genuine, it cannot produce any disease but the genuine Cow-pox; but since other kinds of matter are sometimes limpid, and vaccine matter is sometimes opaque, this criterion is fallacious, and not to be admitted as a certain proof that matter is genuine.

Dr. Cappe cites a passage in Dr. Woodville, to shew, that if vaccine and variolous matter be inserted in the same arm, within an inch of each other, so that the efflorescence becomes blended; matter taken from the vaccine pustule will *invariably* produce the genuine Cow-pox. *Credat Judæus Apella, Non ego.*

Let any one read the reports of Dr. Woodville, and others, an account of which may be found in a former part of this treatise, and then say, whether we have not reason to be cautious how we assent to this hypothesis. A considerable number of pustulous cases have occurred, where the patients were inoculated with matter supposed to be genuine; and those who are most conversant in the practice, believe they were not cases of Cow-pox. This ought to be a

warning to others, not to use matter taken from a pustule in the confines of the small-pox, even if it could be proved, that such matter had sometimes had a hair-breadth escape.

Dr. Cappe asserts, that in cases in which pustules appeared, the matter taken from the vesicle formed by incision, has never communicated any disease but the genuine Cow-pox, to persons not exposed to the effluvia of the small-pox.

Confident as I am, that the opinion of the safety of taking matter from the vesicle on the arm, when the patient labours under a pustulous disease, although adopted by Dr. Cappe, is ill-founded, sufficient proofs of which have fallen under my observation, and that of many others, in this metropolis, and in various other parts of the kingdom, I cannot discharge my duty to the public, without expressing my dissent from his proposition in the strongest terms; and cautioning medical practitioners not to trust matter taken from any person, who has an eruption resembling the small-pox.

Felix, quem faciunt aliena pericula cautum.

Dr. Cappe justly concludes, that as the progress of the disease is variable, the period at which Cow-pox matter may be taken, cannot be determined by the number of days from the time of inoculation. He has seen fluid in a vesicle on the fifth day; in other cases, there has been no appearance of a vesicle

till the ninth. The vesicle is sometimes still later in its appearance: I have known two instances, in which it did not appear till the fifteenth day; and one in which it did not appear till the sixteenth. Dr. Cappe says, and in this I agree with him, that as long as the fluid continues limpid, it is fit for use, but it is to be preferred at an early period.

When I state this, I by no means insinuate, that matter which is purulent and opaque is not efficacious: on the contrary, I have used it in a number of instances, and known it used by others, not only without injury, but with success.

Dr. Cappe gives an account of Cow-pock matter, which was preserved on thread, communicating the disease after being kept a month. Some which I collected on thread for Dr. Marshall, succeeded, after being kept three months, without any other precaution, than being corked in a common phial. This proved successful at Gibraltar; although it had borne the heat of the three warmest months of the year, of a year uncommonly warm, and part of the time in a climate considerably warmer than that of England. This I mention, because Dr. Cappe attributes, and perhaps with reason, the failure of matter sent to the West Indies, to the heat it sustained, as well as to the time spent in the voyage.

The Cow-pock matter which Mr. Cline received from Dr. Jenner, had been taken on a quill, and was

kept closely corked in a phial until he used it, which was three months after.

Dr. Cappe confirms the opinion entertained by Dr. Jenner and others, that the Cow-pox has a tendency to correct a scrofulous habit; having seen one of his patients recover from sore eyes, and eruptions on the skin; and three others from eruptions on the skin, while under inoculation of that disease.

In the York Herald for November 29th, is another letter from Dr. Cappe, wherein he points out the necessity of attention to the rise and progress of the pustule; and the injury that may ensue, when a patient removes to a distance from the inoculator, before the existence of the disease has been ascertained.

It has been stated, that when inflammation appears on the inoculated part before the third day, the Cow-pox will not be produced.—This, Dr. Cappe justly observes, is not invariably true. I have known several exceptions to that rule. In one instance, a pustule appeared in the evening, on the arm of a child who had been inoculated at eleven o'clock in the forenoon; and almost entirely disappeared in four days. At this period, a true vaccine pustule commenced, and ran through its regular course, affording a copious supply of the vaccine fluid, which proved efficacious in inoculation.

The directions given by Dr. Cappe for taking mat-

ter are so judicious, and the point is of so much importance, that I shall insert the paragraph relative to that subject in his own words.

“ When matter is taking for inoculation, it should be done in the most delicate manner ; for if the vesicle be much injured, the erysipelatous inflammation will, be rendered severe.—Though the matter does not flow plentifully at first, on making a slight puncture in the vesicle ; it will, in a little time, come in sufficient quantity to inoculate many persons. It seems partly supplied by secretion ; for I have seen more matter obtained in a quarter of an hour, than the vesicle could be supposed to contain. The matter flows slowly, as the vesicle is not one uninterrupted cell ; but consists of many minute cells, which have so imperfect a communication, that they cannot be entirely emptied by a single puncture. During the formation of the vesicle, minute cells may often be seen arising separately ; and they sometimes remain distinct on the margin. At a late period, when a crust is formed, a ring of clustered cells sometimes rises around it ; more transparent than the original vesicle. These would probably afford matter for inoculation ; for Dr. Woodville lately obligingly informed me, that at the request of parents, he had twice inoculated on the thirteenth day from patients, in whom the disease was so far advanced, that he could only obtain a little moisture from the margin of the scab ; yet he was successful. He concludes, that when the local affection is regular, matter for inoculation may be obtain-

ed from the fourth to the twelfth day. The knowledge of this fact may be useful in remote situations ; though inoculation made with matter as soon as it can be obtained, is most certain. Since this was written, I have learnt from a medical friend in London, from whom further information on this topic may be expected, that matter taken from a vaccine pustule on the fourteenth or fifteenth day, did not produce the Cow-pox, but severe ulceration. As the time is not strictly known, when the matter assumes this change, it seems right, for the present, to restrict the taking of matter to that period, during which it has been found uniformly mild and efficient. This corresponds with the fifth, sixth, seventh, and eighth days after inoculation."

Dr. Cappe concludes his very ingenious and valuable paper, with the following words.

" If it will not intrude too far on your paper, I request you to add the declaration of many eminent physicians and surgeons in London ; published last August ; as it may be unknown to some of your readers. It is a very ample testimony to the truth of the facts, which have been laid before the public in your paper. If you cannot with convenience insert it this week, I recommend it to your attention at some future opportunity."

The York Herald for Dec. 6th, introduces the testi-

monial in favor of the Cow-pox in the following manner.

“ Agreeably to our promise in our last, we have this week presented our readers with a list of the London physicians and surgeons, who have come forward with their names in attestation of the mildness of the Cow-pox; and the security it affords against the small-pox; as alluded to in Dr. Cappe’s letter. We have held it a duty we owe the public, to give insertion to whatever could throw light on this important discovery, when attested by signatures; and we are happy in thus presenting to our readers so many names of the first respectability in London, in support of the desired efficacy of the vaccine inoculation.”

These names are subjoined to the testimonial, which is inserted in a preceding page of this work: those who drew up, and those who signed that testimonial, have great reason to congratulate themselves on their success, which exceeds their most sanguine expectation. It has given an irresistible impulse to the practice; and, by stimulating other respectable bodies of medical men, in various parts of the kingdom, to follow that example, and enlighten the public mind, it has at length nearly borne down all opposition.

Even while these observations are penned, they become less and less necessary. They cannot, how-

ever, be totally useless, while the least traces of prejudice remain.

I now proceed to give an account of such other publications as have appeared on this subject.—In France, a pamphlet, written by Dr. Vaume, assured the world, that the inoculation of the small-pox, when undertaken by well-informed men, like himself, is perfectly satisfactory, and leaves nothing farther to be wished; that is, in plain English, Dr. Vaume is extremely well satisfied with the small-pox, because it is not a perishable branch of trade, like the Cow-pox; but an inexhaustible mine of wealth; did not Dr. Jenner, and his execrable Cow-pox, interfere. Citizen Vaume speaks of the small-pox, as not attended with any ill symptoms, which it is not in the power of such as himself to subdue.—Such gasconades are not confined to France,

Citizen Vaume asserts, that the new practice ought to be rejected, without any farther examination. His countrymen, however, think otherwise; and, instead of rejecting the new practice without a fair trial; reject his pamphlet with the contempt it deserves.

Vaccine inoculation, attacked by such illiberal and selfish characters, wanted not able advocates to vindicate its fame. France and all Europe resounded with its praise.—It would be tedious to recount every author on the continent, who has written in its commendation; or to repeat every eulogium on that in-

valuable discovery, with which the press, in every region, has teemed. Suffice it to present the reader with a few specimens of the approbation and applause, with which this wonderful improvement of the healing art has been crowned.

In the *Bibliothèque Britannique*, a Journal published at Geneva, in the French language, giving an accurate account of all the productions that issue from the English press,—Dr. Odier, a celebrated physician of Geneva, has inserted some remarks on Dr. Jenner's publication; on which he bestows the following well-merited encomium.

“ This work contains an account of a discovery, worthy of the utmost attention; which will, in time, elucidate the doctrine of those diseases, that are communicable by means of inoculation; and may be converted to the greatest advantage of the human race.”

After explaining the cause, the nature, and the beneficial effect of the vaccine disease, Dr. Odier affirms, that since it is so mild and safe, it is evidently the best safeguard against the small-pox; and infinitely preferable to the inoculated small-pox, inasmuch as it is unattended with any considerable eruption, and there is no reason to apprehend, that an epidemic disease can be propagated from its contagion. By these motives, he observes, the English physicians have been induced to adopt the practice.

Dr. Odier states, that from the year 1661 to the year 1772, 2,538,450 persons died in London; 139,432 of whom died of the small-pox; so that one in every fourteen died of that disease. In the same space of time, 76,000 persons died at Geneva; 3,972 of whom died of the small-pox, which is about one in twenty. If we carry back our calculation of the mortality at the same place to the year 1581, and continue it to the year 1772, the whole number of deaths is found to be 1,161,935; of whom 7,292, that is, about one in twenty, died of the small-pox.

At Edinburgh, says Dr. Odier, Dr. Monro informs us, that from the year 1744 to the year 1763, 241,322 persons died; of whom 2,441, that is more than one in ten, fell victims to the small-pox. At the Hague, from the year 1755, to 1769, the number of deaths amounted to 18,071; of whom 145 died of the small-pox, which is more than one in thirteen. In some places, our author declares, the small-pox has proved still more fatal.

After remarking that this pestilential disease, which has raged in Europe for so many centuries, was first brought from the East, Dr. Odier says, In Asia, where its cradle is, it has attacked mankind with the same ferocity; and would long since have dispeopled whole provinces; had not inoculation, the best safeguard, and the most effectual method of diminishing the dangers of this disease, restrained the dire contagion.

This corrector of the deadly taint, our author justly observes, although not unknown in Europe, has not been applied, as it ought to have been, to public advantage. The benefits of the practice have been but lightly esteemed. Even in England, says he, where general inoculation is a subject that has been agitated more than any where else, only a few persons, in proportion to the whole mass of the inhabitants, have been rescued from the fury of the natural small-pox, by this contrivance of art; while a vast majority of parents, have neglected to avail themselves of the salutary means of preserving their offspring; and the ruling powers, neither expressing a suspicion of any ill consequences resulting from inoculation, nor an entire approbation of it, held forth no reward for its encouragement, nor studied to promote the practice.

Whence, Dr. Odier asks, could this inattention to the welfare of the public, fraught with such pernicious consequences, proceed? In my opinion, says he, it might have been owing to the following causes. First, the inoculated small-pox, although for the most part void of danger, sometimes proves fatal. A death of this kind embitters the sorrow of parents for the loss of their offspring; and strikes us with greater terror, than when it is occasioned by a spontaneous disease. A mother who meets with such a misfortune, which she seems to have brought upon herself, is impatient under her affliction, and time itself can scarce obliterate her grief. Even the

very idea, that infants may possibly perish in so melancholy a way, has often annulled the decrees of reason; and rendered her resolutions of no effect.

In the next place, continues our author, although the eruption of pustules is not so copious as in the natural disease, yet it cannot be denied, that the inoculated small-pox also is in a certain degree contagious. Perhaps government might have feared, lest, in consequence of offering premiums for promoting inoculation, the small pox might spread, and the health of the people be the more endangered. This apprehension was countenanced by the opinion of medical men; and plausible arguments were not wanting to prove, that the mortality of the small-pox was augmented, from the time when inoculation first prevailed. To this opinion, however, Dr. Odier is unwilling to subscribe.

For the reasons before mentioned, he remarks, if any kind of inoculation could be invented, which would secure mankind from the contagion of the small-pox, some hope might be entertained, that when this method every where prevails, the very germ of the small-pox might be destroyed; and that disease be banished from the face of the whole earth.

The work we have been reviewing, says Dr. Odier, contains an account of such a security; and proposes a particular species of inoculation, which protects the human frame from the infection of the small-

pox, without producing a general eruption of pustules, or endangering any farther communication of disease to others; unless the virus be inserted, either accidentally or voluntarily, between the cuticle and the skin.

This singular discovery, says our author, independent of the double advantage it possesses over the small-pox, merits the utmost attention of the philosopher. When confirmed by further experiments, it may lead to the most useful enquiries into the origin of contagious diseases; since it exhibits new phenomena concerning their course and communication; and in dairy countries may prove serviceable, by teaching people how to guard their cattle against a disease, which in large farms, is attended with a vast deal of trouble, though free from danger.

In Dr. Odier's account of the deaths at Edinburgh, there is evidently an error of the press. Upon referring to Monro's works, I find, that the total number from 1744 to 1763, instead of 241,322, was 24,322. This mistake being rectified, our author will appear correct when he asserts, that 2441, or more than one-tenth of the whole number, died of the small-pox.

While I have before me the writings of that great man, to whom the first medical university in the world was so much indebted for all her fame, I shall

avail myself of such remarks as are likely to elucidate the point in question.

Dr. Monro says, he thought inoculation a subject of so much consequence to mankind, that it was every person's duty to contribute all in his power towards ascertaining the good or ill effects of the practice. If this opinion was, as I presume it was, unquestionably just, what excuse can be urged for those, who are remiss in endeavouring to ascertain the good and ill effects of the Cow-pox, which has been represented on such good authority, to be a milder, safer, and more effectual substitute for that wide-wasting pestilence—the small-pox.

It must appear surprising to those who read the calculations of Dr. Odier, that this disease should have proved more fatal in Scotland than in any other country mentioned by him; although it lies so far to the North, and from the coldness of the climate may be supposed to mitigate the violence of the small-pox.

The account given by Dr. Monro of the manners and customs prevailing in Scotland may, perhaps, enable us to solve this difficulty. In the first place there is unavoidably a greater intercourse among the inhabitants, from many families entering their dwellings by one common staircase. In the next place, when any persons are sick, in the villages, the neighbours are much in the habit of attending each other.

These causes must naturally tend to communicate the contagion.

In addition to this, Dr. Monro informs us, people commonly allowed their children to associate with those who had the disease in a favourable manner; and even endeavoured to ensure infection, by putting their children to bed with those who laboured under the disease, and tying worsted threads imbued with variolous matter round their wrists.

Our illustrious author, as if foreseeing with a prophetic eye the discovery of a Jenner, gives his opinion, that if the seeds of this disease could be destroyed by a remedy which would not hurt the constitution, the inventor of them might claim what he little expected any one would so soon claim, a title far more glorious than any other title under heaven, —that of a most universal Benefactor of Mankind.

Præsentī tibi maturos largimur honores,

Nil oriturū alias, nil ortum tale fatentes.

All Dr. Monro's correspondents agreed, that the small-pox under the form of inoculation was much less apt to leave other diseases, than that which took place in the natural way. This may serve as a reply to those who still advance arguments against every species of inoculation. But perhaps from the importance of their arguments, and illiberality of their proceedings, they scarcely deserve a reply.

We are informed by Dr. Monro, that it was the custom to take the matter for inoculation from fully-suppurated small-pox; yet we do not find, that this purulent matter was either unable to excite the disease, or productive of erysipelatous inflammation. Both these charges have been brought against purulent matter by very respectable authority. That matter is less active when in a purulent state, must readily be allowed; but that it is more injurious than lymph, I have no reason to suspect.

To return to Dr. Odier's commentary. He says, the grease seldom occurs at Geneva; and that large dairies, where men are employed in milking, are much less common in other countries than in England; hence it is no wonder, Cow-pox is more frequently observed in England than elsewhere.

He says, Dr. Jenner seems to him to have understood the nature of the local inflammation surrounding the incision, after the insertion of variolous matter, better than any of his predecessors.—Dr. Odier has met with two cases, where an eruption of the small-pox took place on the eighth day after inoculation, although no local inflammation appeared to indicate that the disease had taken place. Cases of this kind sometimes occur; but it is impossible, in large towns, to know that this is not the natural small-pox, occasioned by casual infection.

Dr. Odier agrees with the majority of medical

men, in preferring variolous matter while it is pellucid; and is justly surprised, that Dr. Hufeland, Professor of Physic in the University of Jena, commends matter that is perfect and well-digested, for inoculation; thinking that from unripe matter, and such as is taken before suppuration is perfect, a spurious kind of small-pox is produced, and only the genuine species from matter which is perfect and well concocted. It is unnecessary to prove the learned professor's opinion to be erroneous; since there is not a practitioner in Great Britain, whom that opinion is likely to mislead.

The longest time Dr. Odier has known, before redness and tumour, denoting signs of inflammation, have appeared in the arm, after inoculation of the small-pox, was seventeen days. Cases have occurred, where these symptoms have not appeared till twenty-nine or thirty days after the operation.

Our author wonders, that Dr. Jenner should suppose, variolous matter may lose its virtue, when it is in the form of perfect pus. Long experience has convinced me, that although it is more active when limpid, yet it retains its specific property in a considerable degree when purulent; and may still be inserted with safety, and with a great probability of success.

Dr. Odier concludes his remarks with one, which may be of the utmost advantage in rural economy.

A farmer in whose flock a pestilential disease broke out, observing that the youngest animals had it in the mildest manner, infected a great number of his lambs, by rubbing the sides of the fold with the skins of some of the sheep that had died. This kind of inoculation, though coarse, preserved almost the whole hopes of his flock from the ravages of that dreadful distemper.

In the *Medico-Chirurgical Journal*, published at Saltzburgh, are some remarks concerning the subject of Cow-pox; which are a mere echo of certain doubts and difficulties first started in England. The author asserts, that “although the evidence which the celebrated Jenner has adduced, in order to prove the truth of his propositions, deserves the utmost attention; yet it must be confessed, that many points which he affirms are certain and indubitable, must be more accurately determined, before the promised advantage of his new discovery can be rendered certain.

The doubts expressed in this publication, by way of example, relate to three points; namely, the origin of the disease, the permanency of its effect on the human subject, and the necessity of abrasion of the cuticle, in order to ensure infection.

The first point is now confirmed by irresistible evidence. The second was so well proved by Dr. Jenner, that farther evidence would scarcely have been requisite, had not his proposed improvement the stubborn obstacles of prejudice, ignorance, and

self-interest, to encounter. As to the last, I have already suggested a doubt, from the circumstance of a woman having been infected in the breast, in consequence of milk spirting from an infected cow. Perhaps the virus may pervade the cuticle, where it is thin. This point however, is of but little importance in practice.

Dr. Careno of Vienna published an elegant Latin translation of the two first parts of Dr. Jenner's work, in September 1799; in which, after favouring us with the preceding extracts from the two foreign journals abovementioned, he relates four histories of vaccine inoculation, as it appeared at Vienna.

In the first case, the symptoms were such, as to render it doubtful, whether, exclusive of dentition, and a cough, under which the patient laboured, the matter might not also be contaminated with that of the small-pox. An eruption is mentioned; but its progress and termination are not described; so that we are not enabled to decide this point.

In the second instance, infection did not take place. This, the author suggests, is probably owing to the thread, impregnated with Cow-pock-matter, not having been first moistened with warm water. To me, however, it appears more likely, that the failure was owing to a very different cause. For we are told, that a year before, this child had a pustulous disease, exactly resembling the small-pox.

The third case has more than one characteristic of the Cow-pox. The matter, through the whole course of the disease, was thin and transparent, and there was no eruption. Nevertheless the constitutional symptoms were rather more violent than they usually are. Whether this might justly be ascribed to any variolous taint in the matter, I shall not pretend to determine ; but since it was taken from the first patient whose case he has detailed, we may be excused for entertaining that suspicion.

In the fourth case, the febrile symptoms were moderate : and in this instance also, the matter continued thin and limpid, through the whole course of the disease.

After the expiration of two months, the two last patients were inoculated for the small-pox : but the most active variolous matter proved unable to communicate infection.

The next foreign publication which presents itself, is one published at Hamburgh, in October 1800, in German and in English. It is entitled “ Familiar Observations on the Inoculation of the Cow-pox ; as now very generally introduced in Great Britain, and several parts of the Continent, with a view to the final Extirpation of the Small-pox.”—The author is Dr. Alexander Herman Mac Donald ; a native of Holland, now settled at Hamburgh.

By the annals of medicine it appears, that this gentleman graduated at Edinburgh in the autumn of 1799. It is therefore not without reason, that he has prefixed to his interesting work the following motto from one of our immortal bards :

“ To you, ye delicate ! I write,—for you
I tame my youth to philosophic cares,
And grow still paler by the midnight lamps.”

What honours are due to him, whose youthful days and nights are thus devoted to the welfare of the public, and the universal happiness of mankind !

Di tibi, si qua pios respectant numina, si quid
Usquam justitiæ est, et mens sibi conscia recti,
Præmia digna ferent.

In an elegant dedication the author observes, that the discovery of the advantages which may accrue, both to individuals and the public, from the substitution of the *vaccine* for the variolous inoculation, renders it worthy the attention, and the patronage of all those, who have the interest of humanity at heart.

The quotation which immediately precedes the work itself, is no less appropriate, than that which adorns the title-page. It is borrowed from the fertile store of Lucretius ; and is as follows.

Desine, quapropter, *novitate* exterritus *ipsâ*,
Expuere ex animo rationem : sed magis acri
Judicio perpende, et, si tibi vera videtur,
Dede manus.

It is impossible to peruse these lines, without collecting the clamour that has been excited by the Jennerian practice, on account of its novelty. It is necessary to remind the authors of such clamour, that all improvement is innovation, though all innovation is not improvement; and he who is an enemy to improvement, is an enemy to mankind.

Dr. Mac Donald observes, it has often been regretted, that the healing art has not kept pace with the other branches of human knowledge. The cause, in his opinion, is evidently this: medical men, instead of consulting nature, have ever amused themselves with the most idle and extravagant speculations.

With the vain conceits, and arrogant pretensions of such men, he contrasts the modest declaration of one of the first anatomists the world ever produced; who, after spending his whole life, with patient industry, and unremitting application, in anatomical pursuits, openly avowed in his latter days, he hitherto so imperfectly understood the structure of the animal body, "whose machinery is so infinite, the parts so delicate, and their relation to, and influence upon each other so incomprehensible,"—that he looked upon himself in "the true and humble light of a mere enquirer."

"Such," says our author, "were the modest words of Dr. William Hunter,—the honour of his country,

of his age, and of his profession. Had medical men followed the steps of this departed genius,—or had they kept in view, what they were taught by Bacon, “*non fingendum aut excogitandum quid natura ferat aut faciat, sed inveniendum est,*” surely, independent of the benefit humanity would have derived from such a conduct, it would have conferred the highest honour upon themselves, and the science they professed.

“To prove, that this saying of Bacon is founded upon sacred truth,—I shall adduce two well-known instances, *viz.* the discovery of the *Circulation of the Blood*, and that of *Irritability*.—These two discoveries are the greatest ever made in medicine, or perhaps any other science; and have justly immortalized the names of a Harvey and a Haller: yet these were made by a few simple experiments,—while the acutest speculations of former philosophers had failed in the attempt.

“In relating this, I have no wish to expose the science of medicine on its weakest side. No;—by pointing out these errors, my great object has been, to place in a stronger point of view, and reflect higher honour upon, the labours of those eminent men, who have improved the science they cultivated; of men, whose discoveries promise to humanity such benefits, that they deserve to be ranked among the immortal benefactors of mankind.”

Were I to transcribe every beautiful passage,

every liberal sentiment in this publication, and every paragraph that reflects honour on the physician, the philosopher, and the man,—I should transcribe the whole work.—I shall, however, embellish these pages with a few select quotations.

But first I must observe, the author endeavours to account for the variety of opinions that prevail on this subject. The reason of this, he says, is plain. “The works which treat upon this subject were not intended for the public in general; and are only read by medical men; and even few of them read with the attention the subject requires.

“Now and then,” says he, “it is true there appear some accounts concerning this inoculation in the public papers: but these vary according to the whim of their authors; who are in general very ignorant of the subject on which they treat. Thus the public is kept in a continual suspense; not knowing what to adopt, or what to reject. At the same time the subject is of so great importance, and the happiness of every individual in society depends so much upon it, that I hope it may plead an ample excuse, for my presuming to lay before the public, the rise and progress of the Cow-pox.”

In pursuance of his plan, Dr. Mac Donald proceeds to give an account of the rise of the disease, and the places where it has been discovered. He says it has been noticed in Gloucestershire, Devon-

shire, Dorsetshire, Hampshire, Somersetshire, Staffordshire, and Leicestershire. Other counties of England, where also it has been observed, Dr. Mac Donald omits; although they are alluded to by Dr. Pearson, in his Inquiry. These are Buckinghamshire, mentioned by the Rev. Dr. de Salis, and the Rev. Mr. Smith, Middlesex by the servants of Mr. Willan, Oxfordshire by Mr. Howard and Dr. Wall; Norfolk by Dr. Redfearn and Mr. Wales, Suffolk by a servant of Mr. Kendal; and Wilts by Dr. Fowler, and a servant of Mr. Rhodes. Thus it appears, that the disease has been discovered in at least 13 counties.

After stating, that the fact of the Cow-pox being a safeguard against the small-pox was not unknown to medical practitioners, Dr. Mac Donald makes the following appropriate remarks.

“ But before truth” as an elegant author justly observes, “ in its silent or disputed march, has roused the attention of the indolent, converted the supercilious, subdued the interested, and reached the ears of all, an age has passed away.” So one need not be surprised, that facts so long known, and which promised such benefits to mankind, never excited the attention of the medical world, till within these few last years.

“ Thus, as attraction, and the weight and elasticity of the air, shewed themselves to the senses every

day, but required a Torricelli and a Newton to illustrate them; so it required a Jenner, to enquire into, and illustrate, the phenomena of this new disease.

“ This ingenious practitioner began his enquiries, with a benevolence and zeal worthy of imitation. Like an able philosopher, he first enquired into the origin and nature of the disease, as it appeared in the brute; and acquired to himself the knowledge, how to distinguish the true from the spurious Cow-pox. Next he examines the disease as it appeared in man, with the same scruple and accuracy. Having resided upwards of 20 years in Gloucestershire, several hundred instances must have fallen under his own observation, of persons not taking the small-pox, after they had gone through the Cow-pox: but neither these generally received opinions concerning the Cow-pox, nor the failures which he often experienced in his inoculations, and which were generally ascribed to his patients having had the Cow-pox, could satisfy this truly philosophical enquirer. He therefore put it to the test of experiment; and the first experiments he instituted, were to inoculate persons with the small-pox, who were known to have gone through the Cow-pox. Of these experiments he has published about twenty instances; but none of them took the small-pox, either in this way, or by associating afterwards with patients labouring under this disease; although amongst these, there were persons who had been affected with the Cow-pox at the distant period of 25, 27, 31, 38, and even 53 years.

Dr. Mac Donald next gives an account of the second series of experiments instituted by Dr. Jenner; namely, those of inoculating with Cow-pock matter, persons who had never had either the small-pox or the Cow-pox.—After detailing these experiments, he adds, “ By these experiments Dr. Jenner ascertained this most important fact, that the matter in passing from one human subject to another, through five gradations, lost none of its original properties.

We are told by Dr. Mac Donald, that the account of inoculation with Cow-pock matter, published by Dr. Woodville, confirmed what was formerly advanced by Dr. Jenner. Any reader who takes the trouble to peruse the preceding pages of this dissertation, will soon perceive that this opinion is in some degree erroneous.

Dr. Mac Donald himself asserts, that the appearance of the eruption described by Dr. Woodville was a fact quite new; and that neither Dr. Jenner nor Dr. Pearson had ever observed it.

In regard to Dr. Jenner, he is correct: not so in regard to Dr. Pearson, as his own candid confession in the Medical Review will testify. He was one of those unfortunate persons, who received spurious matter; *et quorum pars magna fui*.

After concluding his comment on Dr. Jenner's work, Dr. Mac Donald pronounces a just panegyric

on a gentleman who has borne a conspicuous part in this improved species of inoculation. His words are as follows :

“ Before I finish this account of the labours of British practitioners, who have distinguished themselves in this important enquiry ; I must not omit to mention Mr. Anderson, surgeon in Leith ; who has been particular active and successful with the inoculation of the Cow-pox in his neighbourhood. From his communications to Dr. Duncan of Edinburgh it appears, that the results of his experiments all tend to confirm, what has been advanced by Drs. Jenner, Pearson, and Woodville.

“ He inoculated above an hundred, from the beginning of May to the end of September, 1799 ; of whom only three had any other pustules than those on the incisions ; and none of them fever, or other symptoms, to excite uneasiness.

“ The matter he used for inoculation, was sent to him from London. Two children only were inoculated by this matter. In every other instance, the matter was taken from human subjects, to whom the disease had been communicated from these children ; and through the whole succession, the disease had the same appearance, and was equally slight.

“ Mr. Anderson finishes his communications in the following manner : “ I am of opinion, that the

vaccine inoculation, if it shall continue to be as favourable, as I have found it, will be of much more benefit to mankind than even the variolous ; great, very great, as it has been. In this country I do not imagine that above one-third of the children are inoculated ; owing to the prejudices, arising from frequent deaths. But from the success of the vaccine inoculations, I have been able to persuade numbers in all ranks of life, who could never be brought to consent to variolous inoculation, to allow their children to undergo the vaccine inoculation, from the idea of none having suffered ; I except the case of Dr. Woodville, which appears to be a doubtful one. It also appears to me, that in the three cases where pustules appeared, they were owing to topical inflammation."

Having presented his readers with a succinct account of the rise and progress of this beneficial practice, Dr. Mac Donald subjoins the following just reflections.

" I hope that, from the above histories, every one of my readers is convinced of the efficacy of the Cow-pox inoculation, rendering the person unsusceptible of the variolous infection. Had this fact been ascertained by one single observer, objections would be deemed justifiable ; but as I have adduced a numerous and respectable evidence, all tending to confirm this point, and, as not a single well-authenticated instance has proved the contrary, no reasonable doubt can be entertained upon the subject. I

think it therefore unnecessary, to dwell upon it any longer; and shall now proceed to consider the comparative merits of the variolous and vaccine inoculation.

“ It cannot be denied, but the inoculation of the small-pox has proved to mankind a ready means, to alleviate and escape the danger of a most distressing disorder; still, notwithstanding these happy effects, the inoculated small-pox is sometimes accompanied with symptoms, which give just cause of alarm, and often prove fatal under the most judicious management.

“ Were I to record all the distressing scenes which frequently attend the inoculated small-pox, or relate the sad histories of those unfortunate families, who in consequence of inoculation have felt the ragings of this dire disorder; the stoutest heart would shrink with horror, and drop a tear of pity over the sufferings of humanity.

“ I would wish to drop this subject, for my pen can give but a faint sketch of those pictures of singular distress, which every physician of even moderate experience has witnessed.

“ Fancy to yourself one of these little innocent sufferers, stretched out, and covered with one continued sore; threatened with suffocation, uttering the agonies he feels, by piercing heart-wounding

groans.—Observe how his mouth foams; listen to the grindings of his teeth; see how he thrusts his little trembling tongue betwixt them, and how piteously it is wounded!—Look! how he is agitated with the most dreadful convulsions! his feeble limbs are twisted and contorted, and threaten dislocation; his frame bends backwards, is lifted up and thrown down again!—These fits now increase,—then cease;—alas! only to return with redoubled violence.—Misery calls aloud for help, help;—but calls in vain.—New convulsions succeed;—he foams,—struggles,—gasps,—gasps again,—and expires!

“ If at scenes like these your heart would bleed, what must be the feelings of a fond parent, when ‘ this destroying scourge nips in the bud the fairest blossom of all his hopes ?’

“ What renders these cases often more deplorable, is, that they sometimes happen under circumstances still more distressing.

“ Before me lie the records of two unfortunate families. In the one, a father and four of his children were inoculated for the small-pox; the eruptions proved of the confluent kind; the father and two children died, two recovered.—He left behind him a widow, with her two infants, in the greatest misery. The other is of a young widow, who lost her husband at the early age of 24. One infant at the breast was left her, which, in her pitiful situation,

constituted her only consolation. Soon after, the small-pox began to rage in the city where she lived ; she therefore was advised by her friends to inoculate her little boy. With reluctance, as if presaging her impending misfortune, she consented.—Her fears, alas ! were but too well grounded : on the day preceding the eruption, the child was seized with convulsive fits, and expired on the tenth day.

“ One smiling boy, her last sweet hope she warms
Hush’d on her bosom, circl’d in her arms ;
Daughter of woe !—ere morn, in vain caress’d,
Clung the cold babe upon thy milkless breast,—
With feeble cries thy last sad aid requir’d,
Stretch’d its stiff limbs, and on thy lap expir’d.”

DARWIN.

“ It may be said, that such distressing cases as these are rare. I grant it ; and it is happy for humanity that it is so : still no one can be certain that such a dreadful misfortune may not befall himself, or his family. By inoculation for the small-pox one has a chance, and indeed a very great one, to be saved ; yet, one has no certainty : should therefore means be offered to escape with certainty a destructive and dangerous disease, would it not be an inducement to substitute them for those, which only give you a chance. In my opinion there cannot be a moment of hesitation, but certainty must be preferable to chance : and from the history I have delivered, I with safety dare offer the inoculation of the Cow-pox, as the only certain means of escaping the danger of the small-pox.

“ Fatal instances like those above related, always make a deep impression upon the human mind, ever prone to look to the dark side of the question. This has given rise to a superstition against the inoculation of the small-pox, which time has not yet effaced: the consequence is, that the inoculation of the small-pox is not generally, but only partially practised; hence mankind in general have derived no benefit at all from its practice; for from the extremely contagious nature of the small-pox, whenever inoculation is introduced, thousands of those that were not inoculated, fall victims to this dire disorder in the natural way; so that as many persons die of the small-pox since the introduction of inoculation, as before.”

Deeming it a crime, as every one who reflects on the importance of the subject must deem it, to be silent on such an occasion, Dr. Mac Donald has lavished every possible encomium on the new practice; and contrasted it with the various evils arising from the inoculation and consequent dissemination of the small-pox.

His cogent arguments must convince the most obstinate; and conquer all opposition, but that of sordid avarice and self-interest. His persuasive eloquence, and pathetic strains, must soften the most obdurate heart; and excite compassion in every breast, that can sympathize with affliction, and melt at human woe.

He declares his opinion, that the inoculation of the Cow-pox is so far preferable to that of the small-pox, that it has not hitherto been duly estimated; and that he cannot sufficiently insist upon the superiority of that practice.

He avers, that mankind have in general overlooked the great mortality occasioned by the introduction of inoculation for the small-pox, in consequence of its spreading the infection far and wide;—and have merely considered, what numbers have fallen victims to inoculation itself.

After maintaining, that the inoculated Cow-pox is either not fatal at all, or at least not so fatal as the inoculated small-pox;—he supposes, for the sake of argument, that it were more fatal than that disease; still, he contends, as the Cow-pox is not contagious in the form of effluvia, the inoculation of this disease ought to be preferred to that of the small-pox. The reason is evident: it would, in a great measure, prevent the dissemination of the natural small-pox; and, if universally practised, extinguish that pest, without leaving another pest behind.

His sentiments on the subject of a general inoculation for the vaccine disease, are similar to those of every man, in every country, who possesses the faculty of reason, and has taken the trouble to exert it. I shall therefore present them to my readers in his own emphatic words; which cannot but sink deep

into the heart of every one, who entertains a just solicitude for the welfare of mankind.

“ By the present partial inoculation of the small-pox, it is impossible to extinguish that disorder; it is therefore an object, well worthy the attention of the magistrates and governors of a people. If they would take a serious interest in behalf of that society, of which they are guardians, by establishing proper institutions for the inoculation of the Cow-pox, *with a prohibition of the inoculation of the small-pox*, they could not fail of extinguishing a disorder, *which proves fatal to no less than 40 millions of souls in every century*. At such a deed humanity would smile: in the annals of the world it would be recorded in golden letters; and posterity would bless their memory.”

One powerful argument urged by Dr. Mac Donald, as well as other advocates for vaccine inoculation, is, that it has not shewn a disposition to leave other diseases behind. The small-pox, it is well known, whether natural or artificial, has a remarkable tendency to excite scrofula.

Dr. Mac Donald tells us, an opportunity of examining such a case, was afforded him the preceding year by Dr. Monro, the celebrated Professor of Anatomy and Surgery in the University of Edinburgh. In this case, a child who enjoyed perfect health previous to inoculation of the small-pox, was

attacked immediately after, with a most dreadful disorder, supposed to be of a scrofulous nature; in which almost every bone of her body was affected; some with necrosis, others with caries.

When Dr. Mac Donald saw this child, "she had already laboured upwards of two years under this disorder: and still the disease went on in its progress from bone to bone;—one ulcer being scarcely healed, when another broke out; rendering her one of the most miserable creatures that can be imagined to exist."

In some families, Dr. Mac Donald observes, the small-pox is particularly fatal. In such a family, of course, the vaccine inoculation comes recommended in a peculiar manner.—But, independent of this idiosyncrasy, to which our author alludes, there is sufficient virulence in their inveterate foe, to terrify those who are not quite obtuse in their intellects.

What numbers have had reason to repent giving the preference to the small-pox, even within the last twelvemonth? Five children of an eminent glass-manufacturer in the city were inoculated for the Cow pox; and went through the disease without a single unfavourable symptom. The wife of one of his men, who could not be prevailed on to submit her child to the same species of inoculation, had it inoculated with small-pox. The unfortunate infant fell a victim

to that ruthless disease ; and the still more unfortunate mother is now, alas ! in a state of distraction !

Dr. Mac Donald proposes a trial of vaccine inoculation in those habits, that have proved insusceptible of infection from the inoculation of the small-pox. I beg leave also to recommend it to all those, who fancy themselves invulnerable, from an opinion that they have had the *casual Cow-pox*. How often this idea has proved fallacious, authentic records will sufficiently demonstrate. The necessity of this admonition was suggested to me by a case I heard this day. A woman who had a pustulous eruption, probably the spurious Cow-pox, mistook it for the genuine. This, together with two fruitless inoculations with variolous matter, “lulled her into an idea of security, which has proved delusive.”

The last inconveniences of the small pox, to which this author alludes, are deformities of the skin. These, it may be said, are imaginary evils ; and unworthy of attention, in the eye of philosophy, and of reason. But, till the world is peopled with philosophers, mankind will shudder at the contemplation of a disease, which bereaves a darling infant of his cherub smile ; and robs the most lovely part of the creation of all their beauty.

Having finished his remarks on the comparative merits of vaccine and variolous inoculation, Dr. Mac Donald takes notice, that the practice of vaccine

inoculation is now no longer confined to Britain; but has been introduced into several part of the Continent. He informs us, that in Germany, in particular, this enquiry has been prosecuted with great ardour. Doctors Stromeyer and Ballhorn of Hanover have been indefatigable in the inoculation of the Cow-pox in that city; and their labours have been crowned with success. They have also contributed, by their zealous exertions, to the propagation of this useful discovery, by disseminating the vaccine fluid far and wide. For an account of their strenuous and successful labours, Dr. Mac Donald refers us to the New Hanoverian Magazine; where, he tells us, we shall find much useful information concerning the new practice; and much sound judgment, which these learned men have displayed in the prosecution of their experiments.

I am informed by the most respectable authority, that the Cow-pock inoculation is now practised with the greatest success, not only at Hanover, but also at Leipsic, Dresden, Berlin, and Vienna.

This intelligence was communicated to Dr. Reumont by Dr. Abel, an eminent physician of Dusseldorf, and to me by Dr. Reumont, who has practised at Aix-la-chapelle several years. He is now in London; and, I trust, will accomplish the laudable and patriotic object he had in view;—that of deriving a knowledge of vaccine inoculation from

the fountain head, procuring genuine matter, and introducing the practice into his own country.

Dr. Abel, mislead by false rumours, was doubtful what part to take in this question. Having received from Dr. Reumont a letter on the subject, together with the publications of Drs. Jenner and Woodville, he was immediately converted; and now expresses an anxious desire to commence the practice as soon as he can obtain matter.

Dr. Reumont has now resided in this metropolis three months; where he has had an opportunity of seeing the practice of the principal inoculators in this country. By them he has been furnished with recent vaccine matter; and as he has a passport from Dover immediately to Calais, there is reason to hope he will not fail to excite the disease on the Continent. His amiable manners and modest worth endeared him to those who knew him; and he has left behind him, the regret of all who had the pleasure of his acquaintance.

In addition to the former pleasing intelligence, collected from the publication of Dr. Mac Donald, we learn from the same authentic source, that several physicians in Germany have taken particular pains to discover the Cow-pox in the cattle. They have been so fortunate as to find it in several farms, at Mecklenburgh and Holstein; and have tried several

experiments with it. Of the result of these we are not informed: but there can be no doubt of their event, provided the matter is genuine. Dr. Mac Donald expresses a wish, that their success may excite emulation in other practitioners who may have an opportunity of examining cattle in various parts of the Continent; and is well assured, that the Cow-pox will be found a more common disease, than it is generally supposed to be.

I embrace this opportunity of communicating further information on the same head, relative to our own country; which I have just received from Dr. Jenner. The Rev. Mr. Wallet, who now lives in Gloucestershire, told Dr. Jenner, that when he resided in Lincolnshire, the Cow-pox was well known there. This is, therefore, the fourteenth county at least, in which the disease has been discovered, in England alone.

After stating, that a physician has been sent from Holland to Paris, to learn the results of the experiments instituted there, with an intention of introducing it into the former country; he intimates a doubt, whether it was necessary to send so far, in order to examine into the nature and effects of the Cow-pox; since the province of Holland consists almost entirely of dairy-farms, and if proper enquiries were made, it is not improbable that the Cow-pox would be found there also.

Having acquainted his readers, that this valuable discovery has already crossed the Atlantic, and is now likewise practised in America, Dr. Mac Donald expresses a hope, that the joint labours of those medical men, who have taken a serious interest in this most useful enquiry, will be crowned with success.

One circumstance, however, he thinks necessary for the attainment of so desirable an object; which is, the patronage of the ruling powers. He asserts, that in England and France, institutions for the Cowpock inoculation are already set on foot; and that those institutions are supported by government. Unfortunately, the latter part of this information is founded on error; as far as it relates to the government of this country. Whether the medical committee for vaccine inoculation in Paris is in any degree sanctioned by the French government, I cannot determine. The memoir of Dr. Odier on the subject of vaccine inoculation is drawn up by order of the minister of the interior; and is to be laid before him for his inspection. I trust the ruling powers of this country will not be less vigilant, or less attentive to the welfare of the people, than their neighbours.

After offering his services to the magistrates of Hamburgh, provided they should think proper to engage in such a philanthropic undertaking, Dr. Mac Donald concludes with the following animated address :

“ And you, ye anxious fathers, and fond mothers ! whose distresses I have too often witnessed, and whose fears for the fate of your beloved offspring have too often rent my soul !—’tis the heart-breaking pangs you endure—that have excited my efforts ; and an earnest desire to relieve them that has guided my pen.—Could I dry up your tears, and appease your throbbing hearts, my most ardent wish would be accomplished. Your thanks would constitute my pride ; and the inward satisfaction of having contributed to diminish the sum of human misery, be the highest recompense that Heaven could bestow !”

Every reader must quit this elegant and pathetic author with regret.—He who has once tasted the fruit of the lotus, is never satiated ; but still longs for the same delicious food.

It is, however, my duty to pursue the thread of this important and interesting disquisition ; and to give an account of such other foreign publications as I have been able to procure.

The next article which presents itself is “ a Memoir on the Inoculation of the Cow-pox,” by Dr. Odier of Geneva. This memoir was drawn up by order of the minister of the interior in France ; and is to be laid before him for his inspection. This example is worthy of imitation. *Fas est et ab hostedoceri.*

We are informed by Dr. Odier, that this memoir

was to be sent to all the officers of health in the department. We are also told, that the same experiments which were performed in England, and which so fully demonstrate the advantage of the small-pox, have been repeated with the most complete success, at Vienna, Hanover, Gotha, and Holstein.

One opinion advanced by our author, appears rather singular. He says, "It appears certain, that the inoculated Cow-pox is as much milder than the inoculated small-pox, as the latter is milder than the natural small-pox, at least in the three first years of life: *for after the age of three years there is no great difference between the mildness of the Cow-pox and the inoculated small-pox.*"

This is different from, and indeed so diametrically contrary to, my observation and experience, and to all that I have read or heard of the observation and experience of others, that I cannot but express my astonishment at the assertion. It is my sincere belief, that in general, those who are above, as well as those who are under three years of age, suffer at least a hundred times as much from the inoculated small-pox as from the Cow-pox. Whether this difference in the practice of Dr. Odier is occasioned by the small-pox being milder, or the Cow-pox more severe, in such as are inoculated after three years of age, it is not for me to determine.

Dr. Odier observes, that since there is no proba-

bility of escaping the small-pox through life, there is no way of accounting for the obstinacy of those parents, who object to the inoculation of their children, but by supposing that it proceeds from a dread of the greatest misfortune that can befall a parent,—that of losing a child by a disorder brought on by himself.

“But,” says he, “if, as I trust, the inoculation of the Cow-pox offers the same advantages as that of the small-pox, without possessing any of its disadvantages,—surely they will not be so barbarous, as to expose their infants any longer to such a dreadful disease.

Dr. Odier endeavours to rouse the attention of every father and mother, by reminding them, that a sixteenth part of the human species, and a sixth part of those who are infected in the natural way, die of the small-pox. He affirms, that inoculation alone can secure them; and that the means which Providence has this day put into their hands, infinitely diminish its dangers, and reduce them almost to nothing. He therefore asks, How they can hesitate to allow their infants the advantage of those means?

“What,” says he, “is the cause of your delay? Is it occasioned by the absurd reports which are propagated, in order to bring this inoculation into discredit?—Trace them to the source, and you will find them all false.—Consult your physicians: they

will tell you the truth. What interest can they have to conceal it? Do you not see, that they inoculate their own children, and with the greatest success? Can they give you a stronger proof of their conviction?"

To prevent his countrymen from being deterred by the fear of expense, Dr. Odier informs them, that the physicians of Geneva will ever esteem it a duty, and a pleasure, to inoculate gratuitously those who are not in a state to pay them; and that he has their authority to make this declaration on their part.

When we consider how little the trouble of inoculating the poor would be, provided every medical man undertook his share, we cannot but be surprised, that such offers have not been more general in other countries; indeed, we cannot but be surprised, that they have not been universal.

Dr. Odier requests every parent to examine the evidence which is brought forward; and to reflect, that the destructive scourge which commits such ravages round them, may invade their children; with whose deaths they will be justly reproached, if they persist in refusing the means of preservation there proposed.

Dr. Odier attributes the death of the child inoculated at the Small-pox Hospital to convulsions: in this country it is attributed to the small-pox.

The favourable reports of the success of vaccine inoculation, created the most lively interest in the minds of the medical practitioners of Geneva; who, although they are represented by Dr. Odier to have practised the inoculation of the small-pox with singular success for 50 years, nevertheless occasionally meet with very alarming circumstances in that practice. We know, says he, that, although the inoculated small-pox is in general mild, it is sometimes attended with *violent convulsions, a considerable degree of fever, a copious eruption, which is at all times confluent*, and mortal at least in three instances out of a thousand.

On this account, these gentlemen eagerly embraced the opportunity of trying the vaccine inoculation, afforded them by their countryman, Dr. Carro, settled at Vienna; who informed them that he had received threads impregnated with Cow-pock matter from London; and inoculated his own children, and a number of other individuals with the same.

Some of these threads, which were sent to them by Dr. de Carro, were tried; but did not succeed. He then sent others, with matter taken from the arm of a man, who, although he had had the small-pox, was willing to be inoculated with the Cow-pox, in order to decide the question which originated in this metropolis,—whether it is possible to have the latter disease after the former.

The incision, we are told, inflamed rapidly; and an abundant suppuration ensued. For three days the patient had fever, pains in the armpits, and all the symptoms which seemed to announce the true Cow-pox, but *very forward*.

“ We tried these threads,” says Dr. Odier, “ in the course of the last autumn; and, to appearance, they succeeded. In 20 children inoculated successively with this matter, they produced a similar disease; which developed itself with such rapidity, that in the space of eight hours, the arm was inflamed, and the incision was surrounded with a considerable efflorescence. Fever supervened, and sometimes vomitings; but in 48 hours, all was at an end.”

The rapidity with which the disease ran its course, excited doubts; and so much the more, because, notwithstanding the arms of those who had been inoculated suppurated abundantly, yet it was by a kind of exudation; the matter was concealed beneath a thick crust, and the disease never appeared, as it had done in England, in the form of a well circumscribed vesicle, filled with limpid fluid.

In order to discover the cause of such anomalous appearances, Dr. Odier wrote to Dr. Jenner and Dr. Pearson; desiring them to send him fresh matter. These gentlemen informed Dr. Odier they were convinced, that the supposed Cow-pox which had fallen

under his observation, would not by any means prove a preservation against the small-pox.

This opinion, in fact, was too fatally verified. All those who were inoculated with variolous matter, had the small-pox as perfectly as if they had not undergone any previous inoculation; and three unfortunate children, whose parents absolutely refused to have them inoculated again, caught the small-pox in the natural way, and died.

When pustules are not premature, but full of purulent matter, like those above-mentioned, they want the true characteristics of the Cow-pox. Nevertheless, in the infancy of this practice, there is too much reason to apprehend, that many practitioners may have been led into an error by that fallacious appearance.

Dr. Jenner having received a letter from a baronet in Scotland, concerning two cases of this kind, thought it necessary to enquire into the particulars; and I attended him in that enquiry.

The two subjects were inoculated at the same time, and with the same matter. In one of them, the arm was inflamed to the extent of a pea, by the next morning; and in less than 48 hours from the time of inoculation, a pustule appeared, containing opaque matter. On the sixth day, it was of the size and

shape of half a pea. It then broke ; and, although nothing was applied, the arm was perfectly well by the tenth day. No constitutional symptom was perceived.

The subject of the second case was an infant thirteen months old. In this instance, the progress of the symptoms was still more rapid ; probably from a concurrence of the fever attending dentition. The arm was inflamed the same day ; and the child was very restless, and had a violent fever the ensuing night. Within twenty-four hours from the time of inoculation, the whole arm was inflamed. On the second evening a tumour appeared, which, by the next morning, that is, within forty-eight hours after inoculation, contained purulent matter. The pustule remained whole for the space of five or six days ; having an unequal surface. Then, alternately bursting, and gathering again, it is said to have lasted a considerable time, accompanied with much inflammation. Nothing was applied ; and the arm did not heal in less than a month.

Of the same species was the pustule, which took place in one of the children of a noble earl ; and which is alluded to in a preceding part of this work. Such anomalous pustules will, I fear, prove a prolific source of error. Another source, not much less prolific, is the occurrence of any pustulous disease resembling the small-pox, in those who have had the Cow-pox.

A case of this kind presented itself to my observation this day. An infant who was inoculated with vaccine virus nine months ago, has at this time an herpetic eruption on the face, and one or two small pustules on his hand; but none elsewhere. He is now cutting the canine teeth. One of his brothers had a tooth rash similar to this, although he never had the Cow-pox; and another has been scrofulous for several years: yet a relation of the child was inclined to suppose, that this very dissimilar complaint might arise from his being exposed to the small-pox.

Another instance, which occurred in Drury-lane, has afforded room for much enquiry. A child residing there was inoculated for the Cow-pox at the Vaccine Institution, and had the disease in a perfect manner. After some time, a pustulous eruption took place; which some of the neighbours imagined to be the small-pox. The mother carried her child to the Institution; and was informed by the gentlemen present, that the disorder was not such as had been suspected. Not satisfied with their opinion, she consulted others, who declared, that at so late a period of the distemper, it was difficult to determine its nature.

An eminent physician having expressed a wish that I would enquire into this case, I complied with his request; and, after a minute investigation of all particulars, I was fully convinced, that the latter distemper was the chicken pox.—This is easily demon-

strated by the following circumstance. The mother went to Westminster, distant about a mile; and on her return, perceived a number of small vesicles on the child's face; which continued some days, and matured at last. The same kind of eruption had been discovered on the thigh, the preceding evening.

On my return from this place, I called on Dr. Nelson, one of the physicians of the Institution; who informed me, that, according to the account of the mother, the pustules had continued coming out a much longer time than is usual in the small-pox; and, although several of the physicians and surgeons of the Institution saw the eruption, neither of them thought there was the least reason for suspecting it to be the small-pox.

For the rumours excited by these cases, great apology may be made; but there are others of a different complexion, which are known by their authors to be false. Of this kind was one, which lately reached the ear of a parent, and caused him to defer the inoculation of his child, till it was enquired into.

He was assured, that two children of a gentleman in Bond-street, had the small-pox after the Cow-pox. I endeavoured to convince him the rumour was ill-founded, by telling him of other similar reports which had proved erroneous; but in vain. His friend, as he was called, again assured him of the fact. I therefore called at the house of the gentleman in

Bond-street, and was informed there were no children in that family; but was advised to call at the house of the gentleman's son-in-law, whose children had lately had the Cow-pox. I was there informed by the father of the children, that they had been inoculated with the Cow-pox; *that they had never had the small-pox; nor was he afraid they ever would.*

Another palpable falsehood reached the ears of a very eminent physician-midwife; who having called on me, in order to ascertain the truth, and been assured that it was a misrepresentation, was again told with the utmost confidence, it was true. Instead, however, of resting satisfied with bold assertion, he condescended to enquire once more; and was perfectly convinced that the tale was a gross fiction.

A little art was employed in embellishing the history of this case. A child whom I had inoculated for the Cow-pox, had a proper vaccine pustule on the ninth day; and on the tenth a copious eruption of the small-pox. The propagator of the report falsely asserted, that after the termination of the vaccine disease, I had inoculated the child for the small-pox, and produced the disease. The father of the child had at first circulated the lie; pretending that his child had the Cow-pox first, and caught the small-pox afterwards. Even when I sent a gentleman to him, to ask the particulars, he had the impudence at first to deny that his child had been exposed to the danger of catching the small-pox; but at

length acknowledged the truth of a report, which he knew it would be in vain to deny,—that two children were lying dead of the small-pox at the next door, at the very time when he brought his child to me to be inoculated for the Cow-pox.

The detection of such abominable falsehoods has shewn the necessity of signing a contradiction of them, to every man who cares a jot for the health of the public. In consequence of this persuasion, the physician who had for awhile been imposed on by the false report, when convinced that it was totally destitute of foundation, honoured the testimonial in favour of the new practice with his name.

This is not the only important acquisition which vaccine inoculation has gained by the very snares laid to destroy it. Like every other system, which is founded on the eternal and immoveable basis of truth, it stands secure, and smiles at the vain attempts of all its opponents :

Per damna, per cædes, ab ipso
Ducit opes animumque ferro.

Yet, although nothing is to be feared, with regard to the final success of this cause, much more vigilance and attention are required, to prevent the practice from suffering umerited disgrace. Even while I am penning these remarks, I am informed by a gentleman of great respectability, that a number of persons who had been inoculated by a practitioner not

of the medical profession, and never seen again by him, have been seized with the small-pox; and that vaccine inoculation has thereby incurred some degree of reproach. This evinces the necessity of circumspection in the practice; and that however safe the process may be, in skilful hands,—we are not on that account to conclude, that it is either simple, or easy to be understood.

In addition to the vile fabrications already noticed, I shall here mention one more. Having called at a house where a charitable institution is lately established, I advised the housekeeper to have her child inoculated for the Cow-pox; and offered to perform it gratuitously. She replied, that she had heard of a case in which it had failed to prevent the small-pox. I was referred to the person from whom she had received her intelligence; who, instead of knowing the case herself, as she had asserted, said she had heard it from a friend. This friend, when applied to, said, the child who had the two diseases successively, lived at No. 17, Cottage-row, Peckham. I determined to go instantly to that place; and soon discovered, that Cottage-row was as difficult to be found at *Peckham*, as the *Peckham* gardener. I had, however, no reason to repent of this excursion, since I had the good fortune to obtain the signature of Mr. Rolph, as a sanction to the practice. This gentleman, having formerly been the colleague of Mr. Grove, of Thornbury, must be allowed to be a competent judge, whether the inoculation of the small-pox has so far

mitigated the horrors of that disease, as to render the substitution of the Cow-pox unnecessary.

I now return to the Memoir published by Dr. Odier. In consequence of the favourable opinion entertained of inoculation in general, and of vaccine inoculation in particular, by the people of Geneva, a considerable number of children was presented to the practitioners who offered their service to the public, in order to undergo that salutary operation. An epidemic small-pox, at that time actually reigning amongst them, joined to the excessive heat of the weather, which was an objection to the inoculation of the small-pox, made the people the more eager to avail themselves of the advantages of the new practice.

This enabled the medical practitioners of that city, to ascertain the superiority of the Cow-pox over the small-pox; to watch the progress of the disease; and to observe the nature of those incidental circumstances that sometimes prove troublesome in this complaint.

When Dr. Odier inoculated with a thread, he made a superficial incision, a line and half in length, and separating the lips of the wound, lodged a bit of thread, a line in length, impregnated with vaccine matter, within them. He recommends that the thread should not be cut with scissars, but with a penknife, or some other sharp instrument; because the dry

matter is brittle, and easily lost. He prefers a linen compress and bandage to any other mode of confining the thread in the incision; thinking he has seen plasters impede the action of the virus.

He has also inoculated with matter dried upon glass; diluting it well with a lancet dipped in cold water; Dr. Jenner having informed him, that the least heat destroyed its activity. This lancet being well moistened with the diluted virus, he made a small incision, on which he wiped his lancet well, on both sides; taking fresh matter on it repeatedly, and carefully separating the lips of the wound. When inoculation is performed in this manner, he remarks, no covering is necessary.

But in spite of every precaution, he has found dry matter fail much more frequently than fresh; and even the fresh to fail sometimes; from what cause, it is not easy to account.

Dr. Odier thinks the best time for taking matter is, when the areola is well formed. On this occasion I beg leave to introduce a remark, sanctioned both by the highest authority, and my own experience; which is, that the earlier the vaccine fluid is taken, after the formation of the vesicle, the more powerful it is; but if a practitioner has many patients to inoculate from one pustule, it is prudent to defer puncturing it till about the eighth day; or at least, till it is of a moderate size; for when it is

wounded at an early period, it is sometimes prematurely destroyed, and no matter can be procured from it on a subsequent day.

Our author makes the same observation, with regard to the deceptive appearance on puncturing a vaccine pustule, which has so often been made in this country. When you plunge the point of a lancet into the pustule, it comes out, apparently, dry; and at first we should suppose there was no matter; but presently afterwards, a drop of a very limpid fluid, like water, issues from the aperture. The lancet being moistened with this fluid, Dr. Odier advises, that inoculation should be instantly performed; because the virus very readily dries.

Whenever Dr. Odier inoculated with opaque and thick matter, found under a scab, early symptoms of local irritation occurred; producing fever, inflammation, and all its usual consequences.

“ But when inoculation was performed with a perfectly limpid fluid, such as issues from the vaccine pustule when in its vesicular state, previous to exsiccation, and without neglecting any necessary precaution; the progress of the disease was very uniform. During the four first days, the incision, in general, shewed little or no sign of infection. On the fifth day a little redness and elevation were perceived, similar to what are commonly perceived, at the same period of the inoculated small-pox; but

more glistening, and with a vesicular appearance more distinctly marked.

“ This little tumor gradually increased till the eighth day ; and up to this period, it nearly resembled that of the inoculated small-pox. But at this time, a fever supervened ; and from that moment the vaccine tumor assumed its proper character ; that is to say, it became better circumscribed, more circular, more elevated than that of the small-pox,—of a pale yellow, and semi-transparent.

“ The fever did not manifest itself at all, but by the acceleration of the pulse ; and the patient was not the less chearful or active. Sometimes the commencement, but more frequently the termination of the fever, was accompanied with uneasiness, sickness, and vomiting : but these symptoms were always light and transient.

“ The most common accessory symptom, which occurred to those above three years of age, was a pain in the axilla.—In general, the youngest children appeared to suffer least inconvenience from this disease.—Not one had convulsions ; and very few had startings in their sleep. This,” says Dr. Odier, “ is one of the most important differences between the inoculated Cow-pox and small-pox.

“ On the tenth day, the fever ceases ; and the tumor is surrounded with a beautiful efflorescence of a

pale red, an inch or two in diameter, which continues two days; and sometimes disappears in the centre more readily than at the circumference.

“ When the efflorescence is well formed, the pustule grows dry from the centre to the circumference; and is converted into a hard thick crust, of a brown or black colour; which falls off after the expiration of twenty or thirty days, leaving a pit which is rather deep behind it.

“ Such,” says Dr. Odier, “ is the ordinary course of the disease; which I have observed to be much less variable than that of the inoculated small-pox; where we frequently see a great difference, in the time, and the manner, in which it is developed.

“ In two or three cases out of a hundred, erysipelatous inflammation was observed. In one instance ulceration took place, of sufficient importance to require a poultice. Another case occurred, in which the Goulard water proved insufficient to arrest the progress of erysipelas: however, it terminated spontaneously, without leaving any sort of ill consequence behind. These,” Dr. Odier informs us, “ were the only disasters reported, at a meeting of almost all the faculty of Geneva.” Dr. Odier observes, that “ he has seen the same circumstances happen in the inoculation of the small-pox; and that they are so extremely rare in either kind of inoculation, that they ought not to cause the least apprehension.

“ In one case, the incision was not at all inflamed ; and the erysipelas, which shewed itself on the very day of inoculation, began at the distance of an inch. In others, the erysipelas, although extremely premature, did not in the least degree impede the infection, either local, or general. In others, the erysipelas did not come on till after the efflorescence which constitutes the last stage of the regular Cow-pox.

“ In one or two cases,” Dr. Odier says, “ he had reason to suspect, that this accident arose from a foulness of the lancet, which had been recently ground, and was still greasy.” This reminds us of a passage in the dramatic performance, called Hippesley’s Drunken-Man, in which we are told, that on a certain night, “ when the King was going to Hampton-court in his coach, and reading by candle-light, he set his wig on fire ;—*but it was all the fault of the coachman.*”

To be serious ;

————— quanquam ridentem dicere verum
Quid vetat ? —————

I cannot conceive, that a fresh-ground lancet is capable of injuring any person’s arm, in consequence of a little oil adhering to its surface.

With regard to eruptions resembling the small-pox, Dr. Odier observed them in about two or three cases in every hundred ; and in one or two instances,

the eruption was very abundant; but it appeared evidently to be owing to the epidemic small-pox then prevailing.

Dr. Odier met with four cases, in which the small-pox manifested itself on the fourth or fifth day of vaccine inoculation; which, by this circumstance, became useless. Two of the children who were attacked with that disorder died, the two others recovered; and no difference could be perceived between the small-pox under which they laboured, and the natural small-pox.

On the contrary, if the developement of the Cow-pox preceded that of the small-pox, the first of these two diseases modified the second, always rendering it extremely mild, and causing it perfectly to resemble the inoculated small-pox. The greater part of the pustules prematurely disappeared; the others suppurated, it is true; but did not continue more than six days, having no smell, and not being accompanied with any secondary fever.

The same favourable modification of the small-pox, by the preceding developement of the Cow-pox has commonly been observed in England. Nevertheless, exceptions to that general rule have been met with; and are noticed in a former part of this treatise.

In five or six cases, after the vaccine disease had

made its appearance, Dr. Odier saw a general eruption of a vesicular kind. The vesicles were filled with a fluid as limpid as water; and surrounded at their base with a small areola.—He puts the question, whether this species of eruption is to be attributed to the reigning epidemic, which, he says, frequently produces the small-pox and the chicken-pox at the same time? or rather, whether these should not be considered as real vaccine vesicles, similar to that which forms itself at the incision?

The learned author is inclined to this latter opinion; “because those children who were inoculated with the limpid fluid contained in the pustules at a great distance from the incision, had the vaccine disease in the same manner, as if they had been inoculated with the fluid formed in the incision itself.”—This being the case, it is rather surprising, that any doubt of their nature should have existed. “By their fruits ye shall know them.”

Dr. Odier again puts a query,—Whether this general eruption is so rare, as not to be seen twice in a hundred cases? This question he declares himself unable to resolve. One thing, he says, is certain, which is, that it does not in the smallest degree aggravate the disease.

Our author and his colleagues proved in two ways, that the Cow-pox is a sure guarantee against the small-pox. In the first place, all their patients were

unavoidably exposed to variolous infection, in consequence of a vast number of children labouring under the small-pox, in all parts of the city; yet not one of them had the disease, except those who were previously infected. In the next place, ten or twelve of those who had undergone vaccine inoculation, were inoculated with variolous matter immediately transferred from arm to arm, and with all the precautions necessary to ensure success, many weeks after the vaccine scabs had fallen off; yet neither of them betrayed the least sign of general infection. The incisions were slightly inflamed: but they readily dried up; and there was not the least appearance of an areola, nor the least symptom of fever.

Such is the report of inoculation for the Cow-pox at Geneva; a report which must give unspeakable pleasure to every feeling breast; since it not only serves to silence the idle clamours of the selfish and ignorant; but it also affords a pledge of the rapid progress which this useful discovery will make, in every civilized and enlightened nation, throughout the whole world.

Dr. Odier's Memoir confirms in the strongest manner possible, the ideas entertained by Dr. Jenner; that the Cow-pox is not contagious in the form of effluvia; and that it does not appear to leave any other disease behind; but on the contrary, the health of many very weakly children seems to have been in some measure improved by this operation.

Such, Dr. Odier adds, is the summary result of his observations; which, as he remarks, perfectly agree with those of our countrymen; or, at least, in every essential point.

After informing us, that he has given in the *Bibliothèque Britannique*, a particular account of all that has been published on this subject, by the physicians and surgeons of this nation, the learned author concludes his very valuable and satisfactory Memoir in the following emphatic words.

“What we have beheld, and what we every day behold, leaves no room to doubt, that vaccine inoculation is both a preservative from the small-pox, and a mean by which the disease may at length be utterly destroyed. It is one of the finest and most important discoveries which has been made, for a long time.—May all governments unite in their endeavours to spread it, to make it known, to encourage it, by all those means which are compatible with liberty!—It is, perhaps, the greatest service which can be rendered to humanity.

By a note subjoined to the second edition of this Memoir we are informed, that about 600 persons had at that time been inoculated with the Cow-pox at Geneva; all of whom had the disease in the most favourable manner. Dr. Odier's Memoir was distributed gratis; and his arguments derived additional

weight from the devastation of the small-pox, raging all around.

Together with that Memoir, a paper to the following purport was also distributed.

“ ADVICE

“ TO FATHERS AND MOTHERS.

“ The infant whom ye present is exposed to very great danger, that of catching the small-pox ; a disease which was brought into Europe in the eighth century, and has spread in such a manner, that it cannot be expelled ; and it is morally impossible that infants can be preserved from it, in any other way but by inoculation.

“ Happily, and by the great blessing of Providence, a species of inoculation has been for some time discovered, which many thousands of experiments have proved to be equally safe and efficacious ; and which may, without any inconvenience, be put in practice at all seasons ; and even in children of the most tender age, and of the most weak and delicate constitutions. It is scarce ever accompanied with, or followed by, any unfavourable symptom ; and if such occurs, which is very rare, it is never of much importance.

“ What it produces, is called the Vaccine Disease. It is always extremely mild ; and almost always regular. It has another advantage of great value,

which is, that it is never contagious; so that by inoculating one person with it, we run no risk of giving it to his neighbours: and in the mean while we may rest assured, that those infants to whom we have communicated it by way of inoculation, are thereby for ever secured from all danger of catching the small-pox.

“ If then you would preserve your infant, we exhort you to have him immediately inoculated.—Haste to preserve him in this manner from a dreadful disease; which daily commits such cruel ravages around you; and which may seize him in a moment when you least expect it. Put it not out to nurse, till you have insured him from this danger.

“ There are physicians and surgeons, instructed by great study and experience, and who have no interest in deceiving you, who will give you their advice. They also are fathers; and they have inoculated their own children without hesitation, and with the happiest success. In the name of humanity, and by all that you hold most dear, follow their example: or else dread, that a day will come, when you shall bitterly lament over the death of your child, for having rejected the salutary means which we now propose. They are so simple and so easy, that if you refuse them, or delay having recourse to them, you have no excuse.

“ The undersigned physicians and surgeons will

esteem it a duty and a pleasure, to inoculate all those infants who shall be presented to them: and the public know, that they never demand any retribution of those, who are not in a condition to pay them.

“Signed, Vieusseux, Odier, Vignier, Manget, Veillard, Coindet, De La Rive, Peschier, Drs. Medicines.—Jurine, Fite, Maunoir, Chirurgiens.”

The clergy of Geneva, with a spirit of philanthropy which reflects on them great honour, have very willingly undertaken the charge of distributing this advice; by giving it to the parents of all the children who are presented to them in baptism.

The preceding Memoir is an able vindication of the new practice; and an ample refutation of the principal arguments which have been urged against it. Honoured with the sanction of such talents, it must soon surmount all obstacles; and overcome all opposition.

In the *Recueil Periodique* of the Medical Society at Paris, is an account of vaccine inoculation, extracted partly from the foregoing Memoir, and partly from an Essay on the Cow-pox by Dr. Colon. These are reviewed in conjunction.

The disease is stated, in the periodical work now under consideration, to be endemic in Gloucestershire; and in a note below, it is asserted, that is not

found in any other country. Nothing can be more erroneous than this opinion; as has already been shewn. The very matter which was carried to France by Dr. Woodville, was of a stock which originated in the county of Middlesex; and was taken from a cow in Gray's-inn-lane.

The account given in this work, of the repetition of Dr. Jenner's experiments in London, is incorrect.—The gentleman of the name of Simmons, who is said to have had some share in the task, must be Mr. Simmons of Manchester.

We are told in another part of this work, erysipelatous inflammation sometimes extends itself in a short period, over the whole arm. This, alas! we have reason to believe, is true: but I am perfectly convinced it is equally true, that such an alarming symptom would scarcely ever happen, were not scarification inflicted instead of puncture, or poison inserted instead of Cow-pock matter.

Another article in this work deserves to be remarked. It is there asserted, that Dr. Odier is of opinion, and that the observations of Dr. Woodville confirm the opinion, of pustulous eruptions occurring in this disease, owing to the infection of the small-pox, *previous to* the inoculation of the Cow-pox.

The co-existence of the two diseases, in consequence of variolous infection previously received, I long ago

ascertained. Such are the cases recorded by Dr. Odier : but those which are to be found in Dr. Woodville's Reports, are of a different kind. In those cases no suspicion is entertained, that the patients were infected with the small-pox before they were inoculated for the Cow-pox. The only question is, whether variolous infection was superadded to the vaccine, through the medium of a variolated atmosphere, or of a lancet.

The next article in the *Recueil Periodique*, is a report of the committee established at Paris, for the inoculation of the Cow-pox.

After giving an account of the extinction of vaccine matter in Paris, and its restoration by Dr. Woodville, the committee inform the public, that the cases of inoculation produced by this matter shewed a greater regularity in their course, and displayed a more well-marked character, than those which had preceded them : and that the committee consider the experiments made since this epocha, as deserving of greater confidence. In all these subjects, as well as in the former, the disease was extremely mild; and no ill consequence ensued ; although the number of those inoculated by them, now amounts to more than a hundred and fifty.

The committee have submitted to the test of variolous inoculation, many of those whom they had previously inoculated with the Cow-pox. Fur were in-

oculated with variolous matter, three months after the insertion of the vaccine. Four others were put to the proof at one period, and seven at another, two months after the inoculation of the Cow-pox. Four others were inoculated after the same interval.

Of the four first, three did not experience the least effect from the latter inoculation. The second four, and the seven, escaped in like manner. In five, namely, one of the four first inoculated, and the four last, certain effects were remarked in the punctures. They were all inflamed; and in each of them a local affection had taken place, which was followed by suppuration. In one of these five, the local affection was accompanied with fever; but in no one of them was there the least sign of a general eruption.

From these local pustules, the committee took matter; and inoculated two children who had not had the small-pox. The result was, that the disease took place, as in the ordinary inoculation of the small-pox; attended with fever, and eruption both local and general.

From the experience they have already had, the committee draw the following conclusions.

“ 1. The Cow-pox is a disease, totally distinct from all other kinds of eruptions, and different from the small-pox.

“ 2. The Cow-pox appears to be an affection of the mildest nature; scarcely deserving the name of a *disease*. In the hundred and fifty subjects inoculated with vaccine matter, not the least accident occurred.

“ 3. It appears not to be infectious, either by effluvia, or by contact.

“ 4. It is not attended with any general eruption.

“ 5. It is equally practicable, and safe, at all ages. The committee have inoculated infants at the breast; and persons forty, and fifty years of age; with equal advantage.

“ 6. The committee are of opinion, that the preservative effect is remarkable in the re-inoculations which have been performed with small-pox matter. The nineteen subjects who were submitted to that test, were inoculated with recent matter, taken, in every instance, from a variolous patient who was present.

“ Particular care was taken, to introduce a large quantity of matter into the punctures. Nevertheless, no affection was produced; except what arose, in five out of the nineteen, from a local irritation of the skin. This commenced on the very day when the matter was inserted; and its course was much more rapid, and less regular, than that which takes place in

ordinary inoculation. Instances of this kind are known to occur, in those who are inoculated again, after they have had the small-pox."

The next article in the Periodical collection of Paris, is a communication from the Medical Committee founded at Reims, for the inoculation of the Cow-pox.

The committee informs us, that vaccine inoculation continues to be practised at that place, with very great activity. They declare, they will not amuse their readers with an account of the labours of the Medical Committee of Paris; but wait, till they can complete a report, which ought to fix the wavering resolution of the public.

They maintain, what is already known of the new practice, is sufficient to justify them in opposing those advantages which they have derived from this country, to the cruel ravages of that dreadful scourge—the small-pox.

After observing, that Dr. Odier had inoculated six hundred persons at Geneva with the Cow-pox in the midst of an epidemic small-pox raging there,—the committee inform us, that three physicians and two surgeons of Reims, witnesses of a similar epidemic, which, in the course of the last summer, swept away a number of individuals from their city, *equal to half the births of the whole year*, had adopted

the inoculation of the Cow-pox; the advantages of which they learned from Dr. Odier.

Having lately read an advertisement, giving an account of another similar institution in this country, in addition to those previously established, I shall introduce it in this place; not doubting but it will afford heartfelt satisfaction to every friend of humanity, to see the rapid progress which this beneficial practice has lately made.

“ GLOUCESTER INFIRMARY.

Jan. 1st, 1801.

“ The gentlemen of the faculty having delivered to the weekly board the following recommendations, viz.

“ *To the Governors of the Gloucester Infirmary.*

“ We, the undersigned physicians and surgeons of this Infirmary, desirous of extending the advantages which promise to accrue from the vaccine inoculation to the poorer classes of society, and fearing many evils may arise from its being practised upon them by persons not of the faculty, and ignorant of its genuine appearances,—recommend to the Governors of the Infirmary, to permit a general inoculation of the Cow-pox to be practised at the Hospital, on such proper objects as may apply there for that purpose; and to appoint every Thursday and Monday at eleven

o'clock, for such inoculation, and their subsequent attendance; at which time we will be prepared to give every necessary assistance gratuitously.

“ R. B. CHESTON, M.D.

“ W. ROBERTS, M.D.

“ C. B. TRYE, } Surgeons.
“ R. NAYLER, }

“ The board, being much gratified with the above recommendation, which may be productive of essential benefit to the poorer classes of society, and will occasion no expense to the institution, or interfere in any respect with its internal regulation, hereby give notice, that all such persons as are desirous of being inoculated for the Cow-pox, and are objects of charity, will be permitted to attend at the Infirmary on Thursday and Monday, at eleven o'clock in the forenoon, in every week; at which time any gentleman of the faculty will be at liberty to inspect the progress of the disorder.

“ By order of the board,

“ H. WILTON, Secretary.”

The next article is extracted from the *Journal Du Soir*, Du 7 Frimaire, L'an ix de la Republique Française. It affords another satisfactory proof, that our neighbours on the Continent are not inattentive to this grand discovery.

“ The medical committee established at Paris, for the inoculation of the Cow-pox, have received from

Citizen Caqué, president of that of Reims, the following letter.

“ The committee of Reims have inoculated a cow with vaccine matter, taken from a human subject. Three pustules were produced by three punctures, made on two of the cow's teats. With the matter taken from the cow, nine persons were inoculated; seven of whom had not had the small-pox. The other two were submitted to the operation, in order to determine the comparative effect. The inoculation succeeded in two of the cases; and pursued its ordinary course. This new matter served to inoculate six other persons: in all of whom it promises to be successful.

“ This experiment, which did not succeed at Paris, proves, First, That the vaccine virus undergoes no alteration in the human subject; since it communicates to the cow a disease, resembling that which occurs to the cattle in England. Secondly, That matter taken from the cow, and inserted into the human subject, does not excite a more severe disease, than when it is taken from the human subject. Thirdly, That the identity of the vaccine virus, in the cow and the human subject, is evidently confirmed by this reciprocal transaction from one species of animal to another, without losing its virtue.” The same experiment, as I have elsewhere observed, had been made in England.

The *Moniteur* of 13th Brumaire, and 9th de la Republique Française, bears witness to the success of the new practice at Geneva; declaring, that the small-pox had in a short space of time swept away 250 children in that city; and that 600 persons inoculated with the Cow-pox were all preserved from that disorder, except seven or eight, who had received previous infection. They who will not be convinced of the utility of vaccine inoculation by this proof, will not be convinced though one rose from the dead.

The same gazette, of the 17th of the same month, contains a funeral oration pronounced on Béthune Charost by citizen Piault; in which is the following sentiment.

“ The citizen Armand Béthune Charost, born at Versailles the first of July, 1738, sunk under the stroke of that disastrous and cruel disease, the small-pox, on the ninth day of its duration. It seems as if that terrible distemper was willing to revenge itself on him, for the efforts which he had made to banish it from society; in persuading his fellow citizens to secure themselves by vaccine inoculation; of which I have heard him recount with pleasure the happy success.”

Such is the estimation in which this important discovery is held, by learned and enlightened men, in every part of Europe. Not only the fame of the

practice, but the practice itself, has reached Constantinople; where it has been introduced into the family of Lord Elgin, the British ambassador, by means of vaccine virus transmitted to that metropolis by Dr. De Carro, of Vienna. This acquisition will amply requite that country for the benefit we received from that quarter, by the hands of Lady Mary Wortley Montague.

Nor is Constantinople the most remote seat of this beneficial practice; nor is Europe the utmost extent of its career. It has crossed the waves of the wide Atlantic, and been adopted by Dr. Waterhouse, the learned Professor of the Theory and Practice of Physic in the University of Cambridge.

This university is situated about three miles from Boston. Here the bright beam that was to illumine the realms of Columbia, first dawned. Here the Jenner of America first appeared;

And a new sun in the new world arose.

I am happy in the opportunity of laying before my readers the purport of a small tract on this subject, entitled, "A Prospect of Exterminating the Small-pox; being the History of the Variolæ Vaccinæ, or Kine-pox, commonly called the Cow-pox, as it has appeared in England: with an Account of a Series of Inoculations performed for the Kine-pox in Massachusetts, by Benjamin Waterhouse, M.D. &c. &c. &c."

The author acquaints us that in the beginning of the year 1799, he received from his friend Dr. Lett-som a copy of Dr. Jenner's Inquiry into the Causes and Effects of the Cow-pox; a disease which, he says, is totally unknown in that quarter of the world. He tells us, that on perusing this work, he was struck with the unspeakable advantages which might accrue to that country, and indeed to the human race at large, from the discovery of a mild distemper, which would ever after secure the constitution from that terrible scourge, the small-pox.

We are then told, that Dr. Pearson's work, which the author received a short time after, confirmed in a satisfactory manner the most important part of Dr. Jenner's doctrine.

Dr. Waterhouse proposes to change the name of this disease into Kine-pox; because some think it more delicate. He tells us, there are persons in America, as well as in England, who, after all their other objections are obviated, ask, "What will be the consequence of introducing a bestial humour into the human frame, after a long lapse of years?" Dr. Waterhouse justly remarks, that the same *wise* observation might be extended, so as to express a doubt of the innocence of every necessary of life.

As the ordinary mode of communicating medical discoveries in that country, is by newspapers, Dr. Waterhouse drew up an account of the Cow-pox,

which was printed in the *Columbian Centinel*, March 12th, 1799.

“ This publication,” says our author, “ shared the fate of most others on new discoveries. A few received it as a most important discovery, highly interesting to humanity; some doubted it; others observed that wise and prudent conduct, which allows them to condemn or applaud, as the event might prove; while a greater number absolutely ridiculed it, as one of those medical whims, which arise to-day, and to-morrow are no more.

Here are four descriptions of persons. The multitude in all countries, in regard to their faculty of reasoning, are, perhaps nearly alike. The learned author appears to allow rather too much credit to the indolent and indifferent, who merely observe, what he calls a “ wise and prudent conduct, which allows them to condemn or applaud, as the event might prove.” Had every one been so wise and prudent as this, no one would have been found to make an experiment; and they would still have continued as ignorant of the merits of the practice, as when they received the first publications on the subject.

This country is not without such prudent persons, who stand aloof, like the bat, and intend to join the strongest party. It may be said, there should be no such thing as party in physic. There should be no such thing as party in religion or politics: but while

there is in the world, any relic of prejudice, passion, or self-interest, there will always be more or less of party.

A physician, who is a fellow of a learned body, gave me his opinion, that Dr. Jenner's first publication contained sufficient proofs of the utility of vaccine inoculation, to satisfy any rational man. In this opinion I perfectly acquiesce: it is the opinion I formed, on the first perusal of that publication.

We are told by our author, that a few received the account with which he favoured the public, as a very important discovery, highly interesting to humanity. When Dr. Waterhouse communicated this interesting intelligence to the American Academy of Arts and Sciences, we are told, the reception was much to his satisfaction; especially with the illustrious President, Mr. Adams. We are informed, that, to a profound erudition in laws and politics, this great great man joins no small knowledge in the science of medicine.

In order to obtain a more accurate knowledge of the subject, Dr. Waterhouse wrote to his correspondents in England, and "made enquiries of physicians living in different parts of Great Britain; and of those too who were the least sanguine, although most interested in the event; of men, who objected much, and believed slowly, yet have in the end become its most potent advocates."

To me, who have lived all the while in the metropolis of England, in the centre of vaccine experiments, and conversation on that subject, this description of persons is utterly unknown. I have indeed known some who were *not sanguine*, and who were *sufficiently interested in the event* to account for their *not being sanguine*. I have known those who objected much, and believed slowly; but I know none of them, who deserve to be considered as the most potent advocates of this practice.

As far as we may be permitted to judge, from the account given by Dr. Waterhouse, the reception which this communication met with from Mr. Adams was such, as justifies us in supposing, that he thought it “a very important discovery, highly interesting to humanity.” We do not find, that he was one of the wise and prudent, who received it with a cold indifference; who objected much, and believed slowly, notwithstanding such a mass of evidence was laid before them.—Among such irresolute and indecisive characters, you must not look for an Adams, a Washington, or a Franklin.

Our author next received Dr. Woodville’s first publication, which he presented to the Academy: the contents of which he also communicated to the public.

The brief history which Dr. Waterhouse had given of the origin and progress of this disease, made a fa-

vourable impression on the minds of the people: for, says he, "the dread of that terrible scourge, the small-pox, is still great in America, especially in New England; as is sufficiently obvious, from the numerous laws and regulations for preventing its contagion; and which are all described in my letter to Dr. Haygarth, printed in London in the year 1782, and glanced at in several subsequent letters, to be found in that gentleman's *"Sketch of a Plan to exterminate the casual Small-pox from Great Britain, printed at Warrington in 1792, and dedicated, by permission, to the King."*

The learned author having repeated in America, the experiments which had been performed on this side of the Atlantic, gives a decisive opinion, that the Cow-pox is not infectious by effluvia.

With vaccine matter, obtained by a short passage from Bristol, he inoculated several of his own children; and found the appearance and symptoms of the disease, in the old and new world, more alike than he expected. From the difference of situation, greater dryness of the atmosphere in that part of America, and extraordinary heat of the weather (from 88 to 96 Farenheit), he declares, he expected a greater variation.

To enter into a detail of all the symptoms would be entirely useless. Suffice it to say, that they were much more severe than when the patients are inocu-

lated by a mere puncture. Yet although the malady was in some measure exasperated by this incidental circumstance, it seems, in general, not to have been sufficient to cause the least alarm. The children who had been inoculated, still followed their amusements, almost without interruption; and an infant was inoculated at the same time with the nursery maid; in whom none of the symptoms were sufficient, to diminish for a moment her attention to her little charge. The symptoms in the child seemed to keep pace with those of the nurse.

Dr. Waterhouse agrees with those, who think the Cow-pox specifically different from the small-pox.— He attempted to inoculate two other persons, but failed; which, he says, was probably owing to his using a *new method* recommended by an eminent surgeon in London, which is, to pass a needle with an infected thread through the skin, so as to leave the thread in. This, he observes, probably underwent an alteration similar to what happens in the operation of *wire-drawing*, where most of the oil, and some of the metal, are left behind.

This, however, is *no new method*. Exclusively of its being neither more nor less than the operation well known by the name of a seton in the human body, and a rowel in a horse, it is mentioned by different authors as one mode of performing inoculation; particularly by Dr. Jenner. That gentleman, in his elaborate work on the Cow-pox, after stating

that he had known an inoculator, whose practice was “to cut deep enough” (to use his own expression), “to see a bit of fat,” and there to lodge the matter; says, “the great number of bad cases, independent of inflammations and abscesses of the arms, and the fatality which attended this practice, was almost inconceivable: and I cannot account for it on any other principle, than that of the matter being placed in this situation, instead of the skin.”

“It was the practise of another,” continues he, “whom I well remember, *to pinch up a small portion of the skin, on the arms of his patients, and to pass through it a needle, with a thread attached to it, previously dipped in variolous matter.* The thread was lodged in the perforated parts; and consequently left in contact with the cellular membrane. *This practice was attended with the same ill success as the former.*

“Although it is very improbable,” says Dr. Jenner, “*that any one would now inoculate in this rude way by design, yet these observations may tend to place a double guard over the lancet, when infants, whose skins are comparatively so very thin, fall under the care of the inoculator.*”

We are told by Dr. Jenner, “that in the practice of the late Dr. Hardwicke, of Sodbury in Gloucestershire, whose practice in inoculation was very great, a fatal instance occurred as rarely, as since the Suttonian method was adopted. It was his practice, to

make as slight an incision as possible *upon* the skin, and there to lodge a thread saturated with the various matter." Dr. Jenner thinks it impossible to account for the almost uninterrupted success of this practitioner, and the wretched state of the patients under the care of another, but from the different modes in which the matter was inserted."

I have enlarged the more on the preceding passage, because I have several times heard the same hazardous kind of experiment proposed. I consider it as fortunate for Dr. Waterhouse, that in his cases it did not succeed. It is true the patients on whom it was tried, were not infants.

Dr. Waterhouse next inoculated four gentlemen; I apprehend in the common way. One of them, a physician, chose to live pretty freely, by way of experiment. The consequence was, that his febrile symptoms, especially the head-ach, were full as much as he could bear and walk about. This convinced Dr. Waterhouse that the disease is not to be trifled with.

In order to ascertain whether the Cow-pox was capable of preventing the small-pox, the learned professor had one of his children inoculated by Dr. Aspinwall, physician to the Small-pox Hospital near Boston. This was performed in the presence of Dr. Waterhouse by two punctures, with matter that moment taken from a patient who had a copious erup-

tion. An infected thread was at the same time inserted; and the boy thus inoculated was put into the hospital, where a patient was, who had the small-pox in the natural way.

On the 4th day Dr. Aspinwall pronounced the arm infected; but this infection proved abortive. In a day or two all appearances vanished; and not the slightest trace of disease was produced. One fact, says Dr. Waterhouse in such cases, is worth a thousand arguments. In a note we are informed, that five more of the doctor's family were at that time in the Small-pox Hospital; in order to undergo the same test.

Our author next mentions several circumstances, which, if not attended to, may bring this kind of inoculation into temporary disrepute. These are mostly extracted from the writings of Dr. Jenner.

“ Another circumstance,” adds he, “ tending to discredit the idea of discarding the small-pox, and substituting the kine-pox, is *mixing the two diseases together, and perhaps giving one for the other*, as we presume was done, in some of the hospitals in London. A physician of the first rank, wrote thus to the author, in February, 1799. “ Dr. Waterhouse tells me, that he finds the Cow-pox a more serious disease than was at first imagined; and, considering the safety of inoculation for the small-pox, and the danger

of introducing a new disease into the human frame, probably the practice will not increase."

Dis aliter visum.

Dr. Waterhouse asserts, that Dr. Jenner, and another practitioner, whose initial only is mentioned, undertook to examine how it happened, that a distemper which is so mild in Gloucestershire, should be converted into a pretty severe disease in London. Having made enquiry of Dr. Jenner, I have reason to believe that Dr. Waterhouse's information in this respect, was inaccurate. I cannot learn, that any one undertook to examine into the matter. It is true several practitioners expressed their opinions through the vehicle of the public journals: yet those opinions were founded, not on any particular enquiry instituted at the hospital, but on the reports published by the physician, under whose care the cases had occurred.

Dr. Waterhouse says, the first subjects inoculated for the kine-pox, were chiefly people maintained as *poor*. This, I apprehend, is a mistake; but not of material consequence. Others, besides paupers, are inoculated gratuitously at the Small-pox Hospital, as well as elsewhere. Dr. Waterhouse asserts, that in general, the patients in London had sorer arms, than those in the country: this information, from whatever quarter Dr. Waterhouse received it, was also incorrect. Whatever statements may have been given, respecting the local part of the disease, I am well

convinced, that the atmosphere of London has no particular effect, either in occasioning, or preventing sore arms: having inoculated many persons who reside in the country, as well as those who reside in town, I can safely aver, that the different degree of local disease depends on other circumstances, and not on the difference of the air.

For some time after the commencement of vaccine inoculation, it was asserted, that the arms in London were less apt to become troublesome than in the country; the reverse of what was understood by Dr. Waterhouse. I have not the least doubt, that this depends principally on the treatment, and the season of the year.

If the patients inoculated in London had more fever, and an eruption of pustules, from which those in the country were almost wholly exempt, the cause of both is now well known; and it is in the power of any one, by procuring genuine matter, to remove it. Dr. Waterhouse declined following the advice of his friends, who wished him to establish an hospital for the kine pox; lest it should heighten a very mild distemper into a formidable disease. Of this he may rest assured, there is no danger. I have many times inoculated three, four or five, and in one instance seven at a time, in one family; without aggravating the complaint in the smallest degree.

When the learned professor reflects on the opinion

which he himself has delivered, that the disease is not contagious but in a palpable form, surely he can never apprehend, that the virulence of it can be augmented by crowding the patients together. What occasion there may be for confinement, in this distemper, is another question. My own opinion is, that every hospital, and every dispensary, as well as the house of every surgeon, ought to be considered as a vaccine institution, where all persons, who are willing to accept of the benefit, should be inoculated gratis; and that every encouragement should be held forth to the public, in order to render the practice universal; but I cannot see the necessity of confinement, where, in general, there is scarcely a vestige of disease.

As to the apprehension expressed by some persons, that the security against the small-pox, obtained by the Cow-pox, is not permanent; Dr. Waterhouse observes, that this was one of the most formidable objections urged against inoculation for the small-pox, when first practiced by Dr. Boylston at Boston, in 1721. Yet, adds he, the long experience of *eighty years* has now effectually removed every suspicion of the kind.

The pamphlet concludes with an earnest exhortation to all persons to unite their efforts, in order to exterminate a disease, which has, during the last thousand years, destroyed full a tenth, and probably a larger proportion, of the human race.

There is an appendix, consisting of the general answer to a number of queries put to Dr. Waterhouse by letter; which the author's professional engagements rendered it convenient to insert in the newspapers.

By this it appears, that in August, 1800, Dr. Waterhouse had no clear idea of the true cause of suppurating pustules in the Cow-pox. Although he had before expressed a suspicion, that they were owing to an adventitious cause; yet here he seems to admit they are congenial to the disease, which, he nevertheless maintains, is much less severe than the inoculated small-pox.

He commits another mistake in asserting, that on account of the soreness of the arms, the inoculators in England were obliged to postpone their operations until warmer weather. This, if partially, was not generally the case. However, that cold aggravates the soreness of the arm is universally admitted: and, as Dr. Waterhouse justly observes, cold, combined with dampness, is worst of all.

In this appendix Dr. Waterhouse declared, that he had rather inoculate persons in the *plenitude of health*, without the least alteration of diet, or mode of living. But in a postscript he says, "although I am convinced that the kine-pox is a shorter, safer, and pleasanter disease than the inoculated small-pox, even when conducted in the most fortunate manner; yet

there is some danger of people conceiving too lightly of it."

He tells us, the inoculation of between fifty and sixty persons, of different ages and habits, has taught him, that the kine-pox requires some care on the part of the patient, as well as attention on that of the physician. He gives it as his decided opinion, that abstinence from animal food and stimulating drinks, is as necessary in the kine-pox as in the inoculated small-pox. This ill accords with the experience of European practitioners, even in the most intense heat of the last autumn.

It must, however, be admitted, that the practice, both of Dr. Waterhouse and others, amply proves the necessity of caution; and that in some cases attention to regimen, and an aperient medicine, may be requisite. In one case, violent head-ach, and stricture across the region of the stomach, attended with considerable fever and slight delirium, were occasioned by the patient walking six miles, in a *very hot day*. This is sufficient to prove that some degree of circumspection is required.

Dr. Jenner lately received a letter from Dr. Waterhouse; by which we learn, that he is ordered by the war department to supply the surgeons of the artillery with vaccine matter, in order that the artillerymen and engineers throughout New England might be inoculated for that disease. This is another proof

of the increasing prosperity of the practice; and another instance of patriotic attention to the welfare of the people.

Dr. Waterhouse, and the other practitioners in America, were apprehensive that the matter had degenerated in their practice. This appeared to them to be the case during the month of November in particular, while a considerable degree of cold and humidity prevailed in the atmosphere. At that time, instead of the distinct vaccine pustule, imperfect vesication, and irregular ulceration, were observed to take place.

On this account, the learned professor sent to Dr. Jenner for a fresh supply of matter; and requested that he might have some that was as recent from the cow as possible. This it was not practicable, or necessary to procure; since it is well known to Dr. Jenner, and to all the other principal inoculators in England, that the matter suffers no degeneracy, by repeated inoculation, in the human frame.

The first supply which proved successful in the hands of Dr. Waterhouse in America, was transmitted to him by Dr. Haygarth. It was procured by him from Mr. Creaser of Bath; and produced from the stock of Dr. Jenner. Dr. Waterhouse is again supplied, from the same stock, with matter which has not suffered the least diminution of its original virtue.

In addition to the recent virus which Dr. Jenner himself had an opportunity of collecting, I have by his desire also collected some for Dr. Waterhouse which is derived from the same source. I have inclosed threads, well imbued with matter, between two square pieces of glass, the inner surface of which are charged with the same. In order to exclude air, the edges are cemented with wax. For this purpose I prefer the white wax ; because it is more ductile. Thus preserved, there is no reason to doubt, that it will reach the place of its destination unimpaired in virtue.

In the summer of 1800, I sent some vaccine virus on cotton thread, rolled up in paper, and covered with a varnish which excluded air, to Dr. Crawford, of Baltimore. This gentleman is brother to the late Dr. Crawford, the celebrated author of the *Essay on the Generation of Animal Heat*.

From the son of Dr. Crawford, who is now pursuing in this metropolis, his studies in a profession which he is one day destined to adorn, I have received the pleasing intelligence, that when his father wrote to him, he could just discover, by the assistance of a magnifying glass, a vaccine pustule had taken place.

A few days ago, Dr. Willich, a gentleman well known in the walks of medical literature, informed me that some vaccine virus, which I transmitted in November 1800 to Dr. Waitz, first physician to the Landgrave

of Hesse Cassell, has answered perfectly well. This account was communicated to Dr. Willich, by a letter addressed to the Hessian Ambassador. Dr. Willich, was desired by Dr. Waitz to inform me of this uniform success; and to procure as soon as possible, a fresh supply of matter; as, by some neglect, the former was become extinct. It is understood, that Dr. Waitz is going to inoculate a prince of the blood.

These, and other applications out of number, which are now continually made by the most learned physicians in foreign countries, to those who are much engaged in the practice, are the most convincing proofs of the just estimation in which that incomparable practice is held, by those best qualified to appreciate its value, and to decide on its merits. It is a pleasing task for the medical historian, to write its annals, to register its triumphs, and to record its fame.

I have now in my possession, a copy of Dr. Colon's Essay on the Inoculation of the Cow-pox; of which mention has already been made; and shall therefore give a more distinct account of that performance.

In the introduction we are told, that "although this discovery of the vaccine disease is so wonderful, and although the English have practised this new method of inoculation many years, with the greatest success; it is but a short time, since France first sought to appropriate it to herself."

The learned author is mistaken in supposing, that the practice of Cow-pock inoculation has long prevailed in England; although the antivariolous property of the vaccine virus has been long known.

He informs us, it was not till the commencement of the last year, that M. Larochefoucault-Liancourt proposed opening a subscription, to defray the expense necessary for ascertaining, how far vaccine inoculation deserves the preference to that of the small-pox.

“ This proposition of M. Liancourt was favourably received by one part of the public; and a fund sufficient for the proposed object, was in a short time raised.

“ A medical committee was nominated; and charged to ascertain the phenomena which precede, accompany, and follow the inoculation of the Cow-pox.”

In order to hasten as much as possible, the issue of the experiments proposed to be made, Dr. Colon offered the use of his house; where 40 persons might be inoculated at a time, without having any communication with society.

The learned author is mistaken in supposing, the superior mildness of the Cow-pox over that of the small-pox, is no longer a matter of doubt in Eng-

land: that it no longer ought to be so, must readily be admitted.

The proportion of vaccine to variolous inoculation in this kingdom, appears to me to be over-rated, when he computes it to have been, at the time of his writing, as four to one; although, in the metropolis, it might have exceeded that proportion. He speaks of luminaries in the vaccine hemisphere of this enlightened nation; some of which it would require the glass of Herschel to discover.

Dr. Colon prefers the method of inoculating by puncture, when it is possible; and with fresh matter, the very instant when it is taken from the subject.

He says, although Dr. Woodville in his Reports on the Cow-pox, tells us he has remarked in some of his vaccine patients, eruptions more or less considerable,—we ought nevertheless to consider it as certain, that in inoculation of the Cow-pox, the eruption is confined to the punctures or incisions which are made.

Our author says, In a conversation with Dr. Woodville, when at Paris, Dr. Woodville informed him, that since he had discontinued exposing his Cow-pock patients to the infection of the small-pox, he had not observed any fresh eruptions. It appears, however, by subsequent reports of Dr. Woodville, that the extinction of pustules at the Small-pox Hospital was not then accomplished.

In all those patients which Dr. Colon inoculated, and those whom he saw inoculated at Paris, the eruption was confined to the place of insertion; and the vesicles never exceeded the number of the punctures, by which the virus was introduced.

The learned author justly observes, that no precise limits can be fixed for the latest time of taking matter; since the vesicle sometimes commences at so late a period. In addition to other instances which I have already adduced, Mr. Pearson lately communicated one to me, which occurred to Mr. Jowett, surgeon, of Newington Butts. In this case, from the state of the pustule, when first discovered, the sign of infection must have commenced about the seventeenth day.

The following case, with which I was favoured by Mr. Horsford, surgeon, of Ratcliffe Highway, furnishes an additional proof, that the period for taking matter ought to be determined, rather by the state of the pustule, than the distance of time from the insertion of matter.

It is a case of double inoculation. A child was inoculated by Mr. Horsford for the Cow-pox. On the eighth day, as no vestige of the puncture remained, he proposed repeating the operation; but the mother refused, and insisted on having it inoculated for the small-pox.

Accordingly, on the fourteenth day, Mr. Horsford inoculated it in the other arm with variolous matter. On the third day after, and the seventeenth after vaccine inoculation, a vaccine pustule appeared. The small-pox also had taken place, and was making a rapid progress. On the fifth day it appeared rather pale; on the sixth and seventh inflammation increased, and the child became feverish.

On the eighth Mr. Horsford perceived ten or twelve pustules; the inflammation of the arm had now almost totally disappeared; and by the eleventh day it was quite dry.

On the second day, the pustules were scarcely distinguishable; and the fever was almost gone. On the contrary, the vaccine pustule, from its first appearance up to the twelfth day, made a firm and steady progress; and from that period as regularly declined. No unfavourable symptom manifested itself, during the whole course of the disease.

It may be proper to remark, that the child was at the breast; and that the mother laboured under a fever and sore throat, on the fifth, sixth, seventh, and eighth days. It is not impossible, that previous to the manifestation of this fever, the action of the vaccine virus in the child might have been suspended, in consequence of some change in the milk, occasioned by the latent flame.

Having pointed out the advantages of vaccine inoculation, Dr. Colon proceeds to answer the different objections urged against the practice.

It is the lot, says he, of all useful discoveries, to have to combat, at their commencement, all that the spirit of *party*, or of *interest*, can invent, to arrest their progress.

He observes, that the vaccine experiments were scarcely commenced, when certain persons raised an outcry, about the danger of introducing into the human body, matter taken from a brute. These apprehensions, too violent and premature, as Dr. Colon remarks, to be sincere, were spread with great industry. They are not, however, confirmed by experience; for our author tells us, he himself has inoculated above a hundred children with the Cow-pox; of whom not one had any serious indisposition.

It is proved in a satisfactory manner, by the experience of Dr. Colon, and all the other practitioners in France, that the vaccine virus does not degenerate, by repeated transmissions, in the human subject.

The learned author refutes the absurd arguments advanced against this practice; he contends, that it ought to be adopted as a substitute for the small-pox; which is so highly dangerous to pregnant women, and children in a state of dentition; and that every

partial inoculation of the small-pox, in a populous neighbourhood, becomes a new focus of infection.

Dr. Colon informs us, that before he had absolute proofs of the benefit of this new method, he had formed an establishment for the inoculation of the Cow-pox, at his house at Vaugirard; but now, since it is proved to demonstration, that it is so innoxious both to the individuals who are subjected to the operation, and to the public, he is returned to Paris, in order to inoculate at their own houses all those who put themselves under his care.

Such is the report of the success of vaccine inoculation, presented to the world by an eminent physician of one of the most enlightened nations in Europe. If any thing can add to the well-deserved fame which this inestimable practice has already acquired, this will ensure its triumph, and complete its glory.

I now return to the various publications on this subject, with which the fertile press of our own country teems. The Medical Review for December, 1800, condescends to notice that recrement of literature, the Conscious View. On this occasion, the editors of that celebrated work express themselves in the following manner.

“ We do not think so ill of the favourers of vac-

cine inoculation, as to believe their anger would be excited, or that they would conceive an ill opinion of any writer, who should candidly examine the subject, or suggest any plausible reasons why the practice should not be encouraged; on the contrary, they seem rather to court enquiry, and to wish to hear what arguments or facts may be alleged against its continuance. The writer of the little work before us need not, therefore, on any apprehension of that kind, to have withheld his name from the public, or to have apologized for his performance, provided he had pursued his enquiry, and offered his objections, with that candour which he seems *conscious* the public, for whose benefit he professes to have written, had a right to expect."

The editors of the Review point out the absurdity of this author, in expecting that the Duke of York should obtain proofs of the innocent nature of a disorder, without permitting experiments to be made.

In the same number, the editors of this valuable miscellany appear at length to be convinced, by an accumulation of evidence, which I had before announced, that the vaccine disease does not originate in the cow. They also acquiesce in another opinion which I had before expressed in their review, that the pustulous disease which supervened, after vaccine inoculation at the Small-pox Hospital, was the small-pox.

The same number contains a letter which I received from Dr. Marshall, dated Mahon, Island of Minorca, Sept. 1800.

“ MY DEAR SIR,

“ IN my letter from Gibraltar I informed you of our intention to proceed to this place. We arrived here upon the 7th instant; and have been busily employed amongst the navy and army, who are both equally anxious to avail themselves of the excellent discovery of our friend Jenner.

“ The inhabitants here, from the great dread they entertained of the small-pox, were cautious respecting the Cow-pox; but were so convinced of its innocency, from our arguments, as to permit us to inoculate some of the infants in the Foundling Hospital. From its mild effects upon them, we have now been solicited to extend the practice to their own children; and, if it becomes general, as it probably will, we shall be detained here a few weeks longer. From hence we intend proceeding to Palermo, Malta, or Naples, as a conveyance may offer;—and I have to beg the favour of you to send me some Cow-pock virus to Naples and Palermo.

“ I am sorry that the great haste in which I am obliged to close my letter, prevents the possibility of my adding more, than that the Cow-pox in every instance preserves its characteristic mildness.

“ I remain, &c.

“ J. H. MARSHALL.”

Extract of a Letter from Dr. Marshall, dated H. M. S.
Foudroyant, Gibraltar Bay, October 16, 1800.

" MY DEAR SIR,

" YOU no doubt will be surprised at receiving a letter from me, dated Gibraltar, so speedily after the one I did myself the pleasure of writing to you from Mahon; but as, upon our arrival there, we were too late to join Lord Keith, he having sailed the week previous, I determined to embrace an opportunity that offered of joining him, which I did yesterday.

" He has received me with great politeness; and not only permitted, but recommended the inoculating of the fleet for the Cow-pox; and I this day commence. I am now, and shall continue, on board this ship, till an opportunity occurs of going up to Palermo or Naples, which, I understand, will be in a very short time.

" I am happy to inform you, that the Cow-pox is in full practice here among the inhabitants, and has preserved all its usual mild characteristics in every instance. It was with great pleasure, as well as surprise, that my former friends received me again; and the feelings they express to our friend Jenner, for the benefit they experience from his great discovery, must be gratifying to all his friends,

" Dr. Walker I left busy at Minorca; from whence

he will proceed up to Malta, and we shall join again at Palermo."

It is now incumbent on me to investigate a transaction, over which I could wish to cast a veil; but it is impossible to pursue that line of conduct, without forfeiting the character of impartiality, which it shall ever be my study to maintain,

Waving therefore a minute enquiry into the various inconsistent and even contradictory accounts of the Clapham business, which have been published by several very respectable authors, I shall rest my opinion, and the conclusion I draw, on two facts, which are established by good authorities.

First, A child eleven weeks old was inoculated with supposed vaccine matter, and was scarcely indisposed till the tenth day; when the pustule, which was of the size of a silver penny, containing purulent matter, with an areola as large as a shilling, was stripped of its covering; and, although pain and inflammation commenced from that moment, and increased till death, nothing was applied to the arm to assuage them. This I report on the authority of the mother.

Secondly, A lancet was inserted into this pustule, for the sake of taking matter, which had not been cleaned subsequently to the preceding inoculation, nine days before; and which, of course, was at that time armed with putrid matter, from the blood of

those who had been inoculated, still adhering to it. This I report on the authority of Dr. Pearson, in the Medical Journal; who says, the inoculator himself confesses it.

There are various reports in circulation, concerning the age of the matter with which this child was inoculated; but, I apprehend, this is a point of but little moment to determine; since, as far as we can judge from all accounts, though, from the purulency of the matter, we have reason to doubt whether the patient ever had the Cow-pox, it is evident no danger appeared, till the fatal instrument opened the avenues of death.

That no harm was intended, either to the patient, or the practice, I sincerely believe; but that the mournful catastrophe was occasioned by this inconsiderate proceeding, cannot well be disputed. *Nec via mortis erat simplex.* Dr. Pearson says, Physic does not yet “bear the sheers of Destiny.” I am afraid, he is rather mistaken. If a man pursues that rash line of conduct, in inoculation, which some have pursued, he may soon give convincing proofs, not indeed, that he “holds Mortality’s strong hand,” as Dr. Pearson emphatically expresses it, but that he “bears the sheers of Destiny.” He may soon cut as many threads of life,

Quot Themison ægros autumnò occiderit uno.

The report, that there was no appearance in this

case, deviating from the usual progress of the Cow-pox, although sanctioned by respectable authority, is not confirmed by other respectable authorities; on the contrary, it is evident from Mr. Pears's account, and has been repeatedly stated to me by the mother herself, that the matter was unlike the vaccine fluid, and perfectly opaque.

It appears, by the account which I received from the mother, and that published by Mr. Pears, that the day on which the head of the pustule was removed, and matter taken from the unfortunate child, was the tenth, and not the ninth, as Mr. Pears calculates. This, however, is of no material import; since it is well known, that Cow-pock matter on either of those days is perfectly harmless.

There is a considerable variation between the accounts given by the patients and the practitioner, in regard to the number of incisions with which the other unfortunate patients, who so narrowly escaped, were inoculated. The patients, or their friends, say the number was fifteen; the practitioner affirms, that only three or four were made, except in one instance, where seven or eight were made, at the particular request of the patient, to prevent a second failure.—Long before this event happened, I deprecated the practice of incisions altogether. The black catalogue of melancholy cases brought forward by Mr. Pears, is sufficient to justify the apprehensions I then entertained.

I agree with Dr. Pearson and Mr. Pears, that some slight traces of the Cow-pox may be discerned, amid the chaos of disease created by this confused inoculation. I agree with them, and with the other very respectable practitioners who have written on this subject, with those who have enquired into the business, and with the public, that none of the ill consequences which occurred in the above-mentioned cases can be ascribed to the Cow-pox ; and only wonder, that any person, scarified with that poisoned weapon, could recover.

To prove that no circumstance either of time or place could produce all these disasters, it is sufficient to say, that the poor in the village alluded to had been divided into four districts, to be inoculated by four different medical gentlemen residing there ; and it is asserted on very good authority, that the patients of the three other practitioners had the Cow-pox in a regular manner, without one unfavourable symptom.

In a note subjoined to a paper on this subject, in the Medical Journal for December, 1800, is the following important communication, evincing the danger of using matter for inoculation, which has degenerated from its original state. Whether applicable or not to the case above recited, it well deserves to be recorded here.

“ A professional gentleman of the first rank and eminence in the metropolis, many years ago ino-

culated a child with variolous matter so very far advanced, that he took it from under a scab. It produced a very violent erysipelatous inflammation on the arm; which gradually extended almost over the whole body. The general indisposition thus excited was severe: the arm ulcerated, and the disease terminated in an anasarcaous swelling of the left leg and thigh, and lasted six months. It yielded at length to sea bathing; when the child was again inoculated with *perfect* variolous matter, which produced the small-pox as completely, as if the constitution had not felt the influence of the imperfect."

I have already adduced sufficient evidence, to convince every unprejudiced person, that the vaccine disease has often been unjustly censured. A more palpable instance, if possible, was related to me a few days ago. A child who had been inoculated for that disorder, and recovered, happening to have a fever and an eruption three months after, which proved fatal, that wicked disorder, the Cow-pox, was condemned without judge or jury, as the cause of all that happened; and accordingly a place was assigned to this innocent, and even salubrious affection, in the Bills of Mortality. But what can be expected from the persons who make a report on this subject? They are only qualified to repeat what they hear from the friends of the deceased; and often commit mistakes, in determining what disorder is the cause of death,

Dant veniam corvis, vexat censura columbas,

In the same number of the Medical Journal, is a striking instance of the efficacy of the Cow-pox. This is communicated by Mr. Serjeant. He inoculated a child with the Cow-pox, and on the sixth day, when the pustule began to rise, a plentiful eruption of the small-pox took place on another child in the same family. Mr. Serjeant frequently saw these children lying alternately in the same cradle; yet the child who had the Cow-pox escaped the infection of the small-pox.

The same number of the Medical Journal contains a letter from Mr. Franks; in which he asserts, that the inoculated small-pox is not contagious; and laments that this unhappy persuasion still exists in the minds of well-informed medical men. Hence he thinks the superiority of the vaccine inoculation is over-rated. It is probable, Mr. Franks is the only well-informed man, who entertains either of these opinions.

Towards the conclusion of this number is the following article.

“ VACCINE INOCULATION. ”

“ We observe, that, in some large cities, the faculty have been induced to sign a public testimonial of their approbation of the vaccine inoculation. The names of these gentlemen in the town of Leeds, and cities of Durham and Chester, have come to our hands; and we have great pleasure in subjoining them.

IN LEEDS, BY

Stanhope Baynes, M.D.	William Hey, jun. Surgeon.
Robert Davison, M.D.	Maurice Logan, Surgeon
Benjamin Hird, M.D.	John Moxon, Surgeon.
R. W. D. Thorp, M.D.	Benjamin Musgrave, Surgeon.
Joshua Walker, M.D.	Thomas Parkinson, Surgeon.
Obadiah Brooke, Surgeon.	John Robinson, Surgeon.
Thomas Chorley, Surgeon.	Thomas Rusby, Surgeon.
T. A. Coates, Surgeon.	Matthew Shirlcliffe, Surgeon.
Samuel Dickenson, Surgeon.	John Soper, Surgeon.
Wm. Dodsworth, Surgeon.	James Tatham, Surgeon.
William Hey, Surgeon.	Thomas Teal, Surgeon.

IN DURHAM, BY

G. Cayley, M.D.	W. Ward, Surgeon.
Potts and Clifton, Surgeons.	G. Fothergill, Surgeon.
J. James, Surgeon.	W. Ruddock, Surgeon.
W. Green, Surgeon.	— Nelson, Surgeon,

IN CHESTER, BY

Wm. Currie, M.D.	P. Wilkinson, Surgeon.
Wm. Houghton, M.D.	C. Tomlinson, Surgeon.
W. M. Thackeray, M.D.	Geo. N. Hill, Surgeon.
James Arden, M.D.	John Harrison, Surgeon.
D. Orred, Surgeon.	J. Okell, Surgeon.
G. Rowlands, Surgeon.	W. Connah, Surgeon.
S. Freeman, Surgeon.	Christopher Buck, Surgeon.
George Harrison, Surgeon.	J. M. Asheton, Surgeon.

Meetings of the faculty have also been held at York, Hull, Birmingham, and some other places; and a similar resolution has been adopted.

In a note, at the end of this number, we are told, that Cow-pox inoculation is extending itself in the navy; and is much encouraged by the Lords of the Admiralty. This corresponds with information which

I received from Dr. Blane; to whom, as well as to other physicians and surgeons presiding over the principal military departments, the public are much indebted for the patronage, with which vaccine inoculation has been honoured, in the army and navy of Great Britain.

To some persons it may appear a work of supererogation, to copy into this treatise the names of those practitioners who recommend it. But those persons are little aware of the uncommon obstacles which this infant practice, equally militating against the prejudices of the public, and the interest of medical men, has to encounter.

Res dura; et regni novitas me talia cogit.

I shall therefore strengthen all the arguments I have advanced in favour of this new operation, by copying an important article of intelligence from the Gentleman's Magazine for December, 1800; which is as follows.

“ Dr. Thomas Percival, Physician Extraordinary, Dr. Samuel A. Bardsley, Dr. Edward Holme, Dr. James Jackson, Physicians; Messrs. John Bill, Alex. Taylor, R. W. Killer, M. Ward, G. Hamilton, Surgeons; with Thomas Henry, and John Boutflower, Visiting Apothecaries, of the Manchester Infirmary, Dispensatory, Lunatic Hospital, and Asylum; have agreed in publishing an address to the poor, recommending inoculation for the Cow-pox.

“ Two respectable families, residing near Manchester, have, within these few months, inoculated upwards of eight hundred of the neighbouring poor, of different ages, from two months to twenty years, with uniform success. All these persons recovered, without suffering any sickness, sufficient to confine them for a single day : and only in five or six cases was there the least appearance of the disease, except on the parts inoculated.

“ The two families above-mentioned conceive themselves, as well as the community at large, to be highly indebted to Charles White, Esq. and Mr. C. Gibson, of Manchester, for their great kindness and liberality, in assisting and superintending, with the most vigilant attention, the inoculation of these patients. These gentlemen did more. To satisfy themselves, and the public, of the certainty of the Cow-pox being a preservative against the small-pox, they inoculated, at a proper interval, in one of the neighbourhoods alluded to, twenty of those children, who had passed under their inspection through the Cow-pox, with the matter of the small-pox. For a few days the usual signs of infection were perceived on the arms ; but soon disappeared, without communicating the small-pox to any one of the patients, on whom this most satisfactory experiment was so fairly made.”

We learn from the same authority, that Dr. Cayley of Durham has, with great spirit, inserted a re-

commendation of the Cow-pox inoculation in the northern papers. This statement we are told, is approved of by those gentlemen whose names are subjoined to Dr. Cayley's; all of whom offer to inoculate the poor gratis.

The Medical Journal for January, 1801, yields a rich harvest of vaccine intelligence. The first article of that kind is furnished by Dr. Woodville. By this it appears, that when Dr. Woodville drew up his former report, the number of persons who had received vaccine infection at the Small-pox Hospital exceeded 2,500. It appears by the present report, that since the former was written, upwards of 1,500 have been inoculated at the same place. Of these, says Dr. Woodville "I have a report to present, similar to that stated by me in July last; viz. "With none of the patients did the infection occasion a severe disorder; or excite one alarming symptom."

The number of pustular cases, we are told, has been even less than three or four out of a hundred; the proportion in which such cases were stated to occur, at the period above-mentioned.

Dr. Woodville now admits, that the variolous effluvia, even after vaccine inoculation has made a considerable progress, have in several instances occasioned an eruption resembling the small-pox.

The observations of Dr. Woodville accord with

those of other practitioners, in determining the question, of the imperfect superseding power of the Cow-pox, when the small-pox pre-occupies the constitution. He has remarked, that “in those cases of vaccine inoculation, where the variolous contagion has an early effect, the Cow-pock tumour at the inoculated part proceeds slowly; and never exhibits any efflorescence. The pustules also are more numerous when they appear early in the disease, than when they do not appear till after the twelfth day of the inoculation.

From the facts brought forward by Dr. Woodville, he justly observes, “we may infer, that in this metropolis, and its vicinity, where the small-pox constantly more or less prevails, the vaccine inoculation must sometimes be attended with a pustular eruption, of which it is not the cause.” This renders it probable, that the Small-pox Hospital may in some instances have been undeservedly blamed; but it will not account for the cases communicated by Mr. Jordan; who, with supposed Cow-pock matter, obtained from that hospital, produced the small-pox in three different families, on the same day.

A very curious and interesting case is described by Dr. Woodville, which occurred about two months before his account was written. It tends, as the learned author observes, to shew, that the small-pox and Cow-pox do not hybridise; and may also be adduced as a proof, that two morbid actions may

take place at the same time, not only in the same constitution, but even in the same part.

A girl was inoculated in the hospital, with vaccine matter. Five days afterwards, an eruption of the small-pox took place. On the tenth day of the inoculation, one of the variolous pustules appeared distinctly within the margin of the vaccine tumour. Dr. Woodville charged a lancet with matter taken from the centre of the tumour; and with it inoculated a child: in whom it produced a regular case of Cow-pox. Mr. Wacksel, the apothecary to the hospital, inoculated three children with matter taken from the pustule in the vaccine tumour, and communicated the small-pox to them all.

Dr. Woodville acknowledges it was not till the commencement of last year he was convinced, that the Cow-pox has not the power of superseding the small-pox. I hope his conviction, and candid confession, will operate as a warning to all practitioners, in addition to that given by myself and others, in the course of the year 1799, not wantonly to expose the lives of their fellow creatures to any unnecessary danger. Frequent conversations which I have held with medical men, convince me that this admonition is not unseasonable, even now.

The next article on this subject, is by Dr. Stokes of Chesterfield. He introduced his observations with this preliminary remark. "The discovery of

a disease, in a quadruped of a genus so totally distinct from man, which, without exciting any considerable disturbance in the constitution, renders him insensible to the action of the most generally fatal malady to which he is subject, is a phenomenon which has arrested the attention of every enlightened physiologist.

Our author observes, that in general we are not to expect support, in the prosecution of any new discovery, from the timidity of advancing years; nor to promise ourselves the sanction of those who are past seventy: we have, however, the pleasure to find, that Dr. Hunter of York, in a speech delivered before the directors of the dispensary in that city, recommends a general vaccine inoculation with all the ardour and enthusiasm of youth.

The learned author is of opinion, that the most formidable class of opponents, which the new inoculation has to encounter, are those who calculate their future income by the quantum of expected disease.

Dr. Stokes relates a case of co-existence of Cow-pox and small-pox; where matter taken from the arm produced the Cow-pox, and matter taken from the knee produced the small-pox. This latter disease was owing to previous infection. In this case, Dr. Stokes is inclined to believe, that the Cow-pox inoculation modified the progress of the small-pox; which, instead of appearing on the face and bosom,

broke out on the lower extremities, proceeding very gradually upwards.

Several other instances of the co-existence of the two diseases are related by Dr. Stokes; in some of which the small-pox, which had taken previous possession of the habit, superseded the vaccine pustules, and assimilated them to the variolous eruption.

Dr. Stokes observes, that all inoculators ought strenuously to inculcate the necessity of inspecting every patient, at such periods of the disease, as may best enable them to pronounce, whether the person is rendered secure from the action of the small-pox. Two cases came to his knowledge, in which the surgeon was deceived. In these cases, Dr. Stokes was informed by the parents, that the pustules rose in a few days, and became elevated like those of distinct small-pox; were never flat, were soon changed into a scab; and that the surrounding skin was not inflamed to the extent of more than half an inch from the base.

The whole village of Ilkeston, where these cases occurred, had been inoculated with the Cow-pox. Dr. Stokes earnestly recommended a re-inoculation of all those, whose arms not been regularly inspected, and whose appearances were not distinctly recollected; lest the popular enthusiasm in favour of the new inoculation should be damped by future failures.

The cases above-mentioned, are similar to those described by almost every principal writer on the subject of the Cow-pox. They are exactly of the same nature with those, of which a baffled opponent of the new practice thought it worth while to send intelligence into Scotland.

The discovery of this irregular pustule, Dr. Stokes judiciously remarks, will not only enable us to determine when the vaccine inoculation succeeds; but also to reconcile the contradictory accounts of the effects of the casual Cow-pox, in securing the constitution against the small-pox; as related by Dr. Jenner and the other advocates for the practice; and by Drs. Ingenhousz, Beddoes, and Woodforde, as suggesting a doubt of the efficacy of that practice.

Dr. Stokes thinks it natural to suppose, that in some instances of casual Cow-pox, the pustules assumed the crustaceous form; and that the contradictory evidence afforded by tradition, probably prevented the earlier introduction of the inoculation of the Cow-pox.

The next article in the same valuable miscellany, is by Dr. Lubbock, of Norwich; who introduces his own observations in the following words.—“From the communications upon the Cow-pock, a subject intimately connected with the interests of humanity, and deservedly exciting the attention of the medical

world, I think the Medical Journal has been of the greatest utility; and it was with the greatest pleasure that, in the last number, I read the remarks of Sir Christopher Pegge, of Oxford, and of Dr. Barry, of Cork, upon the same subject."

Dr. Lubbock enters into a very able disquisition, relative to the etymology of Shinach, the Irish name for the Cow-pox. This, he thinks, is of Celtic extraction, and belongs to the Galic language. On looking over, in a cursory manner, some collections and remains of that Celtic dialect, Dr. Lubbock was much surprised and gratified in observing, that in all probability, the word Shinach is a compound Galic term, expressive of a cow's teat.

The word *sinne*, in Galic, means a teat, and *agh* signifies a cow. Hence Dr. Lubbock deems it reasonable to conclude, that the knowledge of the existence of the Cow-pox is coeval with the language of the very early settlers in Ireland.

The next contribution to this comprehensive number of the Medical Journal, is by Dr. Cappe; to whose active and zealous exertions in this cause of humanity, the world is much indebted. Of this letter I before gave an account; but it is here republished with some prefatory remarks, which merit consideration.

He expresses a fear, that want of care in taking

the vaccine matter at a proper period, and watching the inoculation through its progress, will bring some temporary discredit on the new inoculation. He has observed some such instances with regret; and heard of more. He therefore justly thinks, that every effort to awaken a proper attention to this invaluable discovery, may prove subservient to the great purpose of exterminating the small-pox.

That terrible disorder then raged with uncommon violence at York. Three children were inoculated with Cow-pock matter, who, in a few days after, sickened from previous infection of the small-pox; one on the third day, another on the fourth, and the last on the fifth. One died; the other two then laboured under the disease; but hopes of their recovery were entertained. The vaccine vesicle formed in all; but soon lost its characteristic appearance. Its progress seemed to be arrested, at the period at which it was overtaken by the small-pox.

To this animadversion, and the letter of which it is the preamble, Dr. Cappe has annexed a reply to Mr. Franks; whose scepticism, with regard to the infectious nature of the inoculated small-pox, I have before noticed. Let not Dr. Cappe employ his abilities in combating an opinion, which is not likely to make a single convert:

Nec deus intersit, nisi dignus vindice nodus.

The next article on this subject, in the same Journal, is from the pen of Dr. Trotter; who says, he presumes "it will be gratifying to the numerous list of physicians and surgeons, who have patronised Dr. Jenner's discovery, to hear that the inoculation of the vaccine disease is making a rapid progress in the fleet."

On this occasion, he justly remarks, that "if the value of any improvement in the practice of medicine, is to be estimated by its contracting the scope of human misery, the Jennerian inoculation will deservedly be recorded, as one of the greatest blessings ever bestowed on the navy of Great Britain."

He informs us, that within a short space of time, not less than eleven ships of the line, besides frigates, have imported the variolous contagion from different parts of the world. In the flag ship of the commander in chief, while refitting at Portsmouth, in the summer of the year 1800, it extended to twelve cases before it was checked.

One ship of seventy-four guns, carried it to sea in the spring; and buried five seamen during the cruize. Another carried it to foreign parts. The *Impetueux*, while in the harbour, received the small-pox from the Dock; where it raged, and was attended with considerable mortality. A lieutenant in this ship set the example of the new inoculation to the seamen; and sixteen have already followed that example.

Dr. Trotter concludes his remarks on this subject, with observing; that when the candid enquirer, at some future period, shall canvass these obvious facts, it will be seen, whether he was acting an inconsiderate part, in recommending the practice in the navy, when it first came before the public; as malignantly stated by some cold-hearted critic of the present day.

In the same number is another letter from Mr. Frank, on the subject of variolous infection. Here, he seems to admit, that the inoculated small-pox is infectious; but very rarely. He tries to depreciate the value of the new discovery; but in vain. He admits, however, that "from the evidence which has been adduced, there cannot exist a doubt, respecting the security which this analogous disease affords, against the contagion of the small-pox.

He endeavours to vindicate the practice of inoculation for the small-pox, which, he observes, is threatened with disuse. To this practice, he says, we, meaning I suppose, we surgeons and apothecaries, are under great obligations.

One of the arguments which he brings, is, that Mieve, a celebrated inoculator, never knew but one example of contagion propagated by the inoculated small-pox; which was by kissing, and, as the doctor gravely remarks, by close contact. This may be considered as inoculation.

Sulzer, another inoculator, declares he had never seen a single case, where the inoculated small-pox proved infectious. *There are none so blind, as those who will not see.*

Exclusive of the preceding articles, and others which have been before noticed, this number of the Journal contains a testimonial in favour of vaccine inoculation, by four medical gentlemen of Bradford. It is as follows.

“ COW-POX.

“ The practice of vaccine inoculation, though of recent origin, has already forced itself upon the notice of the first professional characters in this and the neighbouring kingdoms. Its advantages are too numerous to be detailed here: but it may be proper to observe, that the vaccine disease requires no preparative medicine, no change of regimen, no confinement, and is seldom attended with much indisposition.

“ We admit that, comparatively, few have perished by small-pox inoculation; but it is consistent with our experience, that numbers have been so dangerously ill, as to excite serious alarms for the issue of the complaint. Under the circumstances of vaccine inoculation, no symptom of danger has ever been exhibited. The small-pox is a disease of contagion. The Cow-pox cannot be communicated but by actual contact or incision; which circumstance enables the inoculator to single out any individual for the ope-

ration, without subjecting any other member of the family to the smallest risk.

“ That the Cow-pox is a substitute for the small-pox, is now sufficiently certain. The experiments which have been instituted, to put the question beyond all doubt, are numerous, conclusive, and satisfactory.

“ Impressed with a conviction of the truth of those facts, and animated by no other motive than a sense of duty, and a sincere desire to rescue the lower orders of society from the ravages of a contagion, which to them is so peculiarly distressing and fatal, the undersigned surgeons are desirous to introduce a disease infinitely more mild, and very certainly safe: They are therefore solicitous to recommend to the inhabitants of Bradford and its vicinity, the practice of vaccine inoculation: and they hereby inform the public, that they will attend at their own houses every Tuesday and Friday morning, to inoculate, gratis, the children of the poor; and Dr. Mossman, should any indisposition occur, or other circumstances requiring extraordinary attention, will give his joint assistance in carrying every person so inoculated safely through the disease.

“ GEORGE MOSSMAN, M. D.

“ THOMAS JONES, } Surgeons.

“ W. MAUD, }

“ THOMAS LISTER, }

“ Bradford, Dec. 4, 1800.”

Then follow a number of respectable signatures, which had been added to the London testimonial; which are already given in this work.

In the Medical Review for the same month, is a communication from Mr. Harrup of Chobham, on the same topic. Mr. Harrup met with a number of cases, which proved infectious, and were attended with pustulous eruptions. He has not mentioned from what quarter the infection was originally derived; nor enabled us to judge, whether the disease was of a hybrid kind, or whether it was the small-pox. Certain it is, that it was not the Cow-pox.

In the same Review for February, is an account of Dr. Aubert's report concerning the Cow-pox. This gentleman was delegated by the National Institute of France, to examine into the state of vaccine inoculation in England, and the success attending the practice. I had the honour of meeting him at Dr. Jenner's, and was informed, that he had been attending the Small-pox Hospital several months, and had seen 1,500 inoculated for the Cow-pox, at that place.

After what has been already advanced in the course of this work, little remains to be added. I shall therefore enter no farther into the report of Dr. Aubert, than to remark, that he seems to have fallen into the same error as other learned men, who saw the Cow-pox principally at the Small-pox Hospital. He

supposes the pustulous eruptions are sometimes the genuine offspring of the Cow-pox. This was owing to his seeing the disorder through a false medium: it was for a while eclipsed by the clouds of the variolous atmosphere; and would still have been eclipsed, had not the luminary of this heaven-descended science again shone forth, to dissipate the gloom.

On this occasion, the editors of the truly respectable work above alluded to, express their sentiments in the following terms.

“Upon the whole, we are decidedly of opinion, with Dr. Jenner, and almost all other British inoculators, that whenever the varioliform eruptions take place, they are the effect of the small-pox poison some how or other communicated to the patient: and it seems to us highly probable, that these eruptive appearances are rendered milder than they would, if the patients had not been previously under the influence of vaccine inoculation.”

In the Medical Journal for February, 1801, we are favoured with an interesting case by Dr. Harrison of Horncastle, communicated to Sir Joseph Banks, and by him to the editors.

It is that of a child who was inoculated for the Cow-pox, and had the disease locally. This was evinced by a series of subsequent inoculations, in

other subjects, with matter taken from this patient; and by the security from the small-pox which those inoculations afforded.

This may appear to some persons a surprising case: but I have not the least doubt that it is common. It is one of those cases, that may be considered as abortive. Like those described by every vaccine inoculator, it was distinguished by its rapidity; which is the most certain sign, that the disease will be nipped in the bud.

As to the circumstance of this premature pustule having communicated infection, and a patient imparting security to another, without enjoying it herself,—I have no difficulty in supposing that the same thing would have occurred in other instances, so as to have been ascertained, had not inoculators in general abstained from taking matter in all those cases, where an untimely pustule appeared.

Dr. Harrison himself makes the following observation. “Several well-attested instances are upon record, where variolous contagion from inoculated pustules, has produced a perfect small-pox; and yet the subjects from whose arms it was taken had only a local infection; and afterwards passed through the small-pox, either in the natural way, or by inoculation. If it were necessary, I could corroborate this fact by detailing several cases; which either occurred

in my own practice, or have been communicated to me by gentlemen of veracity and judgment."

Whether the failure in this case is to be imputed to the constitution of the patient, or to the matter employed, it affords, as Dr. Harrison observes, no solid objection against vaccine inoculation; since the want of success occurs in the small-pox, and since experienced inoculators are enabled to determine with confidence, whether the vaccine patient will continue exempt from that disease.

This case Dr. Harrison mentioned to me when in town; as well as the following.—About two years ago near 200 persons were inoculated, under the direction of Dr. Harrison, at the Dispensary at Horn-castle. "In one instance, a small tuft of hair, resembling that on the child's head, was observed to grow from the incised part, immediately after the desquamation." Thus a new action was excited, and a formative nisus was produced, in the part inoculated; similar to that which occasionally takes place in other parts of the human body, and particularly in the ovarium. This fact is worthy of the attention of the physiologist.

Excrescences of other kinds frequently happen, from accidental causes; such as outward violence. I was consulted about a tumour on the elbow, which entirely surrounded the olecranon, by Mrs. Windus,

of New-street, Hanover-square. This was a fatty tumour, occasioned by a blow from the corner of a lock of a door. It was then of ten years standing; the integuments were inflamed, and threatened ulceration.

Nine years before, a surgeon refused to take it off, for fear of danger. I determined, however, with Mr. Hunter's approbation, to remove it. The base was apparently very broad; but this appearance was fallacious. When an incision was made through the integuments, the tumour emerged. It was of the shape of an orange, with one third cut away; and adhered to the arm only by a small pedicle.

This excrescence I shewed to Mr. Hunter; who observed, that, from its lobulated appearance, he had not doubted of its being an adipose tumour. I shewed it also to Dr. Bradley, and other medical men. It weighed four ounces Troy weight.

Here I beg leave to introduce one remark, which is, that the nature of this tumour is not well understood by medical men in general. Few, even of the most eminent whom I have conversed with, at public societies, or in private, know the disinction between the fatty tumour and the steatoma. The first is an organic; the latter an inorganic substance. The fatty tumour is furnished with blood-vessels; but I have the authority of Mr. Home for saying, that it is not supplied with nerves, and of course is insensible.

A more general knowledge of this tumour, seems to me to be a desideratum in the medical world. I trust, therefore, I shall be excused for introducing it here. The idea was suggested by Dr. Harrison's case; where an excrescence of another kind took place from a similar cause, namely, morbid irritation. This digression, I fear, will be considered as an excrescence; but I hope it will be allowed to be an excrescence naturally growing out of the subject.

Ten thousand such cases as that related by Dr. Harrison, would prove nothing more than what has long been known; and is repeatedly adverted to in the course of this treatise. The precocity of a pustule ought always to render it suspected: if an areola be wanting, the suspicion ought to stand confirmed.

This very day, without making the least enquiry of the kind, I was informed by Mr. Hobson, surgeon, of Great Marybone-street, that his brother, who was present, had been inoculated by his father, a very eminent inoculator of Middleham, in Yorkshire; and that a proper pustule arose on his arm; yet he had the small-pox, with a considerable eruption, several years after.

The accuracy of this account was not only asserted by Mr. Hobson, who, together with his father, attended his brother during his illness; but was also confirmed by his brother's testimony, and also by the cicatrices of the pustules on the arm, and the marks of pocks on his face.





